CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 30TH SEPTEMBER 1884.

28th Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:
PUBLISHED AT THE STATISTICAL DEPARTMENT OF THE INSPECTORATE GENERAL OF CUSTOMS.
AND SOLD BY
Messrs. KELLY & WALSH, SHANGHAI, YOKOHAMA, AND HONGKONG.
LONDON: P. S. KING & SON, CANADA BUILDING, KING STREET, WESTMINSTER, S.W.
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National Oceanic and Atmospheric Administration

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, *31st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Tientsin*, *Chefoo*, *Hankow*, *Kiukiang*, *Chinkiang*, *Shanghai*, *Ningpo*, *Foochow*, *Tamsui*, *Takow*, *Amoy*, *Swatow*, and *Canton*.

SHANGHAI, *1st May 1885.*

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Chefoo, pp. 1, 2;

Report on the Health of Ichang, pp. 3, 4;

Report on the Health of Shanghai, pp. 5–9;

Report on the Health of Amoy, pp. 50–52; each of these referring to the half-year ended 30th September 1884.

Report on the Health of Foochow, pp. 10–16;

Report on the Health of Pakhoi, pp. 53–57; each of these referring to the year ended 30th September 1884.

Report on the Health of Tamsui and Kelung for four years ended 30th September 1884, pp. 17–21.

Report on the Health of Takow for two years ended 31st March 1884, pp. 22–49.

A further note on Distoma Hepaticum, pp. 58–60.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

W. A. HENDERSON, L.R.C.S.Ed., L.R.C.P.Ed. ..... Chefoo.

A. HENRY, M.A., L.R.C.P.Ed. ..... Ichang.

R. A. JAMIESON, M.A., M.D., M.R.C.S. ..... Shanghai.

T. RENNIE, M.D., CH.M. ..... Foochow.

C. H. JOHANSEN, M.D. ..... Tamsui.

W. W. MYERS, M.B., CH.M. ..... Takow.

B. S. RINGER, M.R.C.S., L.S.A. ..... Amoy.

J. H. LOWRY, L.R.C.P.Ed., L.R.C.S.Ed. ..... Pakhoi.

WALLACE TAYLOR, M.D. ..... *Osaka, Japan.*

For everything enclosed within square brackets [ ], the compiler is responsible.

DR. W. A. HENDERSON'S REPORT ON THE HEALTH OF CHEFOO

For the Half-year ended 30th September 1884.

DURING the past hot season the health of the port has been good. With the rise of temperature there occurred, as everywhere, the usual diarrhœa, occasioned in part by the heat, and in part by indigestion, unwise eating and drinking, and insufficient clothing at night, which last is worthy of attention, as visitors from the South, not remembering the greater daily range of temperature, do not take precaution in this respect, and are thus liable to suffer soon after arriving. The few cases of dysentery under treatment were due to neglected diarrhœa, a frequent cause of the complaint in this port. Further to be recorded are three cases of typhoid fever.

The first of these, a sailor belonging to H.B.M.S. *Curaçoa*, proved fatal, after 28 days, from perforation. The other two made good recoveries, one after 24 days, and the other after 43 days, of fever accompanied by considerable intestinal trouble.

The appearance of the disease was to me a surprise, as no case of it had been seen either by Dr. CARMICHAEL or myself, which combined experience extended over 15 years.

The meteorological observations for the past six months I hesitate to present, owing to an inaccuracy. However, as here I would emphasise the mean annual range of temperature, I would point out that in 1878 the range was 16°, and in 1879 it was 17°. BUCHAN states that the daily range is least in wet climates and in temperate climates. Hence it is less in Ireland than in Scotland, greater in England than in both these countries, and still greater on the continent of Europe. At Trivandrum, in Southern India, during the dry season in January the daily range is about 17°, but during the rainy season in July it is only half that amount. Dryness is inimical to malaria; moisture is an essential condition. Malarial fever I have not seen in Chefoo where the houses have been properly elevated, and has only been found when this has not been attended to, and then only when the drainage is defective; and when occurring the type was mild. During the past hot season cases of malarial poisoning coming from the South have done well.

In this Report I would record in part my experience of the treatment of malarial fever in Ningpo. Formerly I sent a note regarding it to the *Edinburgh Medical Journal*, and it appeared in the number for March 1881; and as in the interval my experience is still further extended, I would now supplement what was then stated.

In Ningpo the mean annual range of temperature is 9°, and in some months the range is as low as 5°. The degree of humidity thus indicated, together with surrounding flooded rice-fields, decaying vegetable matter, and general high temperature, offer the conditions of malarial development. Of continued malarial fevers thus generated there are a variety of types, with a duration, so far as I have been able

to judge, not unfrequently inversely proportionate to the degree of pyrexia. When the temperature is high, as thus indicated, they may extend from a couple of weeks to about as many months; when low, *i.e.*, with a daily rise of about a couple of degrees, the fever may persist for as many years, or more. In the hot season of 1880 the above fevers became prevalent, and quinine proving powerless, I determined to try it in combination with other drugs. The salicylate of sodium had previously, in the hands of others, been tested without success; but owing to its hepatic action, I resolved to give it further trial as indicated. *Of the salicylate the maximum dose used was 40 grains, with 10 grains of quinine, and that* twice daily. A frequent method was to administer the drugs per rectum, and in the following way. The salicylate was suspended in mucilage, the quinine dissolved in glycerine, and the two mixed. No rectal irritation resulted from the combination. As a rule, the above was efficacious in all the forms of fever when recent; when no decided effects followed, calomel was of considerable service. After a few days, if no marked benefit resulted, the drugs were discontinued. If depression followed the salicylate, there was organic disease further than mere fever. When the temperature was low, I found ipecacuanha with quinine very effectual. If the last form of fever had persisted for months, benefit was not to be obtained by either method, and then pilocarpine, combined with other treatment, appeared to me to be the drug from which most was to be hoped. The above methods of treatment do not apply to the fever that attacks old residents.

A further note I would make in regard to the treatment of sea-sickness.

In the autumn of 1882 I had under treatment a case of epilepsy. As the depression occasioned by the bromide of potassium was considerable, I resorted to BROWN-SÉQUARD'S method of the three bromides, to the great relief of the patient. Shortly afterwards I had a patient returning to Europe who had suffered continuously on the previous voyage, and to prevent the recurrence of the morbid condition I determined to try the three bromides. The potassium salt, given alone, was contra-indicated in sea-sickness, *owing to its depressing effect; and the sodium salt I was inclined to think would not be sufficiently* powerful. The individual made the voyage in perfect comfort. Since then I have had other two cases of ladies who have suffered without intermission on previous long voyages, and who, under the influence of the drugs, have not merely not suffered, but have been enabled to enjoy the voyage to England. It is hardly necessary to add that the influence of the drugs must be established some time before going on board. The maximum dose of the mixture is a gramme of each of the potassium and sodium salts, and half a gramme of the ammonium, at bed-time, and one-sixteenth of this quantity after each meal. I have generally administered the drugs in glycerine and water, but lately it has been suggested that the briny taste can be best concealed by the syrup of gooseberries.

DR. A. HENRY'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1884.

As compared with ordinary years, the health of the inhabitants of this district during last summer was very good indeed, there being a complete absence of epidemic disease and a much smaller number of cases of malarial fever than usual. This immunity from disease, inasmuch as the sanitary state of the place remains the same, must be ascribed to meteorological conditions. Last summer was exceedingly dry, and a high temperature prevailed. In the summer of 1883, which was characterised by a severe epidemic of cholera and much malarial disease, the opposite conditions existed, namely, much rain and a low temperature.

The health of the members of the Customs staff was on the whole very satisfactory. There was one death, a Chinese, from consumption. Amongst the foreign residents one death also occurred, that of a child of eight months old, from diarrhœa.

I treated among the native population a considerable number of accidents in the period under review. These were not, however, of any special interest, being cases of scalp wounds, lacerated wounds of the limbs from falls, burns and scalds, and the like. All did very well. Small-footed women (all the women here bind the feet) are very liable to accidents, the result of this deformity. Two cases of POTT'S fracture were treated, neither of which would probably have occurred had the women been in possession of sound feet.

Suicide is very common in Ichang, and in the numerous cases where it takes the form of opium-poisoning I am frequently called on to supply an emetic. Mr. COCKBURN of the Scotch Mission, who has a dispensary here, has almost endless cases of this kind. The native remedy is a dose of wood oil, supplemented by charms and enchantments. Death is also sought by other methods, as drowning, hanging, and self-wounding. The incitement to commit suicide is generally of the most trivial nature; but then one must take into account the force of fashion and the strength of the imitative faculty. Merely as an indication of the astonishing prevalence of what might be termed an Ichang malady, I cite three cases which within a few hours came to my personal knowledge.

10th June 1884.—A young girl, the betrothed of a mason in the employment of the Customs, was living in the house of her future father-in-law. On this day she broke a basin, and being scolded, went into an adjoining room and hanged herself.

2. Same day, a man living in the city, who had an altercation with his father, committed suicide by hanging.

3. Next day, a young man living in the city, also having had some dispute with his father, rushed to the river beach and inflicted some wounds with a chopper on his chin and on the throat over the thyroid

cartilage. I saw him in the evening, but by that time the application of a piece of the skin of a chicken had stopped bleeding, and there was evidently no serious damage done. I did not interfere with this treatment. The case terminated favourably.

METEOROLOGICAL TABLE.

Month.	Thermometer (Fahr.).				Barometer.		Rain.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	Rainfall.	Number of Days.
1884.	°	°	°	°	*Inches.*	*Inches.*	*Inches.*	
April	81	41	70	57	30.46	29.89	1.99	7
May	90	54	78	65	30.40	29.80	2.23	9
June	90	62	81	72	30.20	29.82	3.46	11
July	96	74	88	79	30.18	29.76	2.20	10
August	96	67	85	76	30.22	29.80	4.00	11
September	85	66	81	71	30.30	29.86	3.17	4

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Half-year ended 30th September 1884.

ABSTRACT of METEOROLOGICAL OBSERVATIONS taken at the Observatory of the Jesuit Mission at Zikawei, for the Six Months ended 30th September 1884. Latitude, 31° 12′ 30″ N.; Longitude E. of Greenwich, 8h. 5m. 45s. *

DATE.	Barometer at 32° F.	THERMOMETER. Diurnal Mean Temperature in Shade.	THERMOMETER. Extreme Temperature in Shade.	Amount of Vapour in the Air per Cubic Foot.	Humidity, 0–100.	Ozone, 0–21.	Velocity of Wind per Hour.	Mean Direction of Wind.	Total Evaporation during Month.	Total Rainfall during Month.	REMARKS.
1884.	*Inch.*	° *F.*	° *F.*				*Miles.*		*Inch.*	*Inch.*	
April... Max...	30.316 (2)	68.9 (25)	79.2 (25)	.01723 (25)	86 (15)	20 (6)	36.7 (6)	S. 63° E.	3.91	2.53	Eleven rainy days. Lightning for the first time on the evening of the 21st. Thunderstorm on the 22nd.
Mean	30.029	55.8	...	.01125	75	13	13.7				
Min....	29.626 (25)	41.4 (7)	31.8 (2)	.00627 (2)	59 (27)	9 (27)	0.6 (10)				
Range	0.690	27.5	47.4	.01096	27	11	...				
May..... Max...	30.093 (3)	75.0 (26)	87.8 (26)	.02186 (17)	92 (3)	17 (3)	41.0 (18)	S. 41° E.	4.92	4.00	Twelve rainy days.
Mean	29.876	65.6	...	.01502	71	12	14.1				
Min....	29.595 (29)	50.7 (3)	46.4 (3)	.01124 (12)	54 (30)	9 (12)	0.0				
Range	0.498	24.3	41.4	.01062	38	8	...				
June ... Max...	29.991 (3)	82.9 (21)	96.1 (13)	.02780 (21)	85 (25)	16 (23)	31.5 (16)	S. 58° E.	3.95	4.97	Fourteen rainy days. Thunderstorm on 22nd.
Mean	29.756	73.0	...	.02046	74	11	13.1				
Min....	29.499 (16)	67.8 (2)	57.0 (2)	.01287 (2)	60 (2)	6 (21)	0.6 (28)				
Range	0.492	15.1	39.1	.01493	25	10	...				
July .... Max...	29.892 (4)	84.4 (26)	92.1 (26)	.03054 (26)	84 (9)	12 (15)	47.8 (22)	S. 33° E.	4.39	4.73	Eleven rainy days. Thunderstorms on 6th, 7th and 14th.
Mean	29.704	80.2	...	.02720	77	8	16.3				
Min....	29.511 (13)	70.7 (1)	65.3 (2)	.02129 (1)	70 (5)	5 (13)	0.6 (1)				
Range	0.381	13.7	26.8	.00925	14	7	..				
August Max...	29.941 (20)	82.8 (6)	93.0 (2)	.03078 (1)	84 (16)	14 (16)	39.1 (22)	S. 82° E.	3.33	5.98	Sixteen rainy days. Thunderstorms on 15th and 19th.
Mean	29.732	79.2	...	.02607	77	8	11.5				
Min....	29.542 (4)	72.9 (16)	67.8 (26)	.02288 (25)	69 (7)	3 (22)	0.6 (15)				
Range	0.399	9.9	25.2	.00790	15	11	...				
Sept. ... Max...	30.136 (28)	80.4 (8)	89.6 (14)	.02816 (14)	90 (23)	14 (23)	39.1 (23)	N. 28° E.	2.72	5.78	Fourteen rainy days. Thunderstorm on 5th. Typhoon, to the east, on the 23rd.
Mean	29.891	74.4	...	.02282	78	8	13.0				
Min....	29.598 (14)	68.9 (25)	61.5 (19)	.01710 (25)	73 (27)	4 (8)	0.6 (3)				
Range	0.538	11.5	28.1	.01106	17	10	...				

* Position of British Consulate, Shanghai :—Latitude, 31° 14′ 41″ N.; longitude, 121° 28′ 55″ E. of Greenwich.

NOTE.—The figures in parentheses indicate the days on which the observations to which they are appended were made. Under the headings "Diurnal Mean Temperature in Shade," "Humidity," and "Ozone" they indicate the days on which the *mean readings* were respectively highest and lowest.

For the above table I am indebted to the Rev. MARC DECHEVRENS, S.J., Director of the Observatory.

BURIAL RETURN of FOREIGNERS for the Half-year ended 30th September 1884.*

CAUSE OF DEATH.	APRIL.	MAY.	JUNE.	JULY.†	AUGUST.	SEPT.‡	TOTAL.
Small-pox	...	1§	1§	...	...	...	2
Typhus fever	...	...	...	...	4§	...	4
Enteric fever	...	...	...	...	...	*f* 1	1
Remittent fever	...	*1*‖	...	...	...	*1*‖	*2*
Chronic rheumatism	...	1¶	...	...	...	...	1
Bright's disease	...	1	...	...	...	...	1
Cynanche maligna	...	...	1**	...	...	...	1
Cancer	...	...	...	...	...	1	1
Heat apoplexy	...	...	...	...	1	...	1
Apoplexy	...	...	1§	...	...	...	1
Hemiplegia	...	...	...	...	...	1§	1
Convulsions	...	...	*f* 1‖††‡‡	1‖ *f* 1§‖	...	...	3
Meningitis	...	...	...	*f* 1‖	...	...	1
Hæmoptysis	...	...	...	1§	...	...	1
Bronchitis	...	*f* 1§	...	...	...	...	1
Pneumonia	...	...	...	...	...	1	1
Phthisis	...	2†† 1§‡‡ 1	...	...	...	...	4
Apnœa	...	...	...	...	*f* 1‖	...	1
Disease of the heart	...	1	...	...	...	...	1
Cyanosis	...	...	1‖	...	...	...	1
Diarrhœa	...	...	...	2	...	1	3
Accident	...	...	...	...	...	1§¶¶	1
Drowned	1§	1§	1§	2§	...	...	5
Suicide	...	...	...	...	1	...	1
Uncertified	...	*f* 1 1§	...	...	...	...	2
TOTAL	1	13	6	8	7	7	42

* Not including deaths (if any) among the Catholic religious bodies, among Eurasians or Japanese; exclusive also of still-births.

† A fatal case of small-pox occurred on board a Japanese man-of-war in July.

‡ Two fatal cases of typhoid fever occurred on board a Japanese man-of-war in September, and at least one fatal case among the Japanese on shore.

§ Not resident (19).

‖ Infants (8).

¶ Native of Macao (1).

** Aged 29 years.

†† Malay (3).

‡‡ Consular certificate.

¶¶ Fall from aloft.

Comparing the above table with that given in my last Report but one,*** we are struck by the absence of cholera and dysentery from the list of causes of death, and by the diminished number of deaths from phthisis (4, as against 11) and from heart disease (1, as against 8). On the other hand, we have to note the occurrence of 3 fatal cases of small-pox, and of 4 cases, also fatal, of typhus. All these occurred among non-residents.

Of the 42 deaths recorded above, 1 was due to suicide, 5 to drowning, 1 to an accidental fall on board ship, and 1 (an infant) occurred at one of the lighthouse stations. 34 deaths therefore remain to be attributed to disease proving fatal in Shanghai during the half-year. Of these, 7 occurred among infants, *among which, again, supposed congenital defect accounted for 2. The foreign adult mortality was*

*** Customs *Medical Reports*, xxvi, 3 (Report for half-year ended 30th September 1883).

thus 27 (24 males and 3 females), as against 66 (58 males and 8 females) during the corresponding period of 1883. The following tables give a full analysis of the figures for the past half-year:—

CAUSES of DEATH from DISEASE among RESIDENT EUROPEAN ADULTS.

Enteric fever	1 (female).	Pneumonia	1
Bright's disease	1	Phthisis	1
Cynanche maligna	1	Heart disease	1
Cancer	1	Diarrhœa	3
Heat apoplexy	1	Uncertified	1 (female).

10 males and 2 females, as against 15 males and 8 females during the corresponding period of last year.

CAUSES of DEATH from DISEASE among the INFANTS of EUROPEAN RESIDENTS.

Remittent fever	2	Meningitis	1 (female).
Convulsions	1	Apnœa	1 („).
Cyanosis	1		

4 males and 2 females, as against 3 males during the corresponding period of last year.

CAUSES of DEATH from DISEASE among NON-RESIDENT EUROPEAN ADULTS.

Small-pox	2	Hæmoptysis	1
Typhus fever	4	Phthisis	1
Apoplexy	1	Bronchitis	1 (female).
Hemiplegia	1	Uncertified	1

11 males and 1 female, as against 35 males during the corresponding period of 1883.

CAUSES of DEATH from DISEASE among RESIDENT NON-EUROPEAN ADULT FOREIGNERS.

Chronic rheumatism	1 (native of Macao).	Phthisis	2 (natives of Manila).

3 males, as against 7 males in the last previous corresponding period.

CAUSE of DEATH in a NON-EUROPEAN FOREIGN INFANT.

Convulsions . . . . . 1 (female, Manila).

1 Malay female child died during the corresponding period of 1883.

Although no deaths from either cholera or dysentery were registered among foreigners, neither disease was absent. Diarrhœa and dysentery were extremely prevalent, though the graver forms were not encountered, at least by me. It will be noticed that three deaths are attributed to diarrhœa. Malarial fevers, and typhoid of the usual questionable type, came frequently under observation, and in August, for the only time this season, I had to deal with the comatose form of intermittent. The case terminated favourably. A form of fever which might easily be taken for typhus in its last stage was of frequent occurrence among the Chinese from July onwards. Several cases were brought to St. Luke's Hospital, after having been given up by native doctors. I saw a considerable number in private, where the patients were directly or indirectly connected with foreigners; but in all but one (which recovered), death was imminent when I was called. This fever may be typhus. There is a petechial eruption identical with

or closely simulating the typhus rash as seen in advanced cases. But the absence of a complete history in any instance prevents me from arriving at a decisive opinion; while, considering the crowded, filthy and ill-ventilated condition of the houses in which all the sufferers referred to were found, and the lack of any intelligent attempt at public sanitation, one would expect that if it were typhus the disease would rapidly become epidemic in Shanghai. Nothing of the kind, however, occurs. I have never been able to trace the spread of this fever by contagion, and it therefore seems probable that such cases as I have seen were instances of neglected remittent fever. Cholera was, as usual during the summer months, widely spread among the natives, but I have been unable to obtain any reliable reports as to its fatality. One case, in a foreigner, occurred in my practice.

The patient, a delicate, adult male, who had recently been seriously overworked, was seized at 1 A.M. on the 1st August with uncontrollable vomiting and constant painless purging. He had gone to bed the previous night in his usual health, and had eaten nothing out of the common. He took several doses of laudanum in succession, but vomited each after a few seconds. I saw him at 4.30 A.M. The surface of the body was then drenched in perspiration, and cold; breath cold; vomiting and purging *of opalescent fluid continuing. Violent cramp of both feet, but not of legs. Temperature in axilla*, 97°; the thermometer could not be retained in the mouth. Pulse, 120 or thereabouts, barely perceptible. Chest and abdomen were covered with mustard; ½ grain morphia was injected hypodermically, 15 minims of a saturated solution of camphor in rectified spirit was given every hour, and ice was allowed freely. At 8 A.M. there had been three stools of the same character since 5, and vomiting was constant. Cramps in calf muscles partially relieved by dry rubbing. Abdomen retracted, eyes sunken, cheeks hollow, choleraic voice distinctly marked. Pulse, perceptible, 110. ⅜ grain morphia was injected and treatment continued. At noon there had been no stool since 8 A.M., and vomiting had ceased except when excited by *something swallowed. The choleraic expression was now very decided. Intense thirst, extreme restlessness;* patient lay with eyes half exposed, tossing feebly from side to side. Had not passed urine since beginning of attack, but believed he had done so with his first stool. Bladder empty. ¼ grain morphia hypodermically, which calmed him after about a quarter of an hour. Camphor to be continued. At 4.30 P.M. no stool since 8 A.M.; but vomiting continued, as thirst was unbearable, and he insisted on drinking iced seltzer water. The general appearance was much improved. Pulse, 110, easy to be counted. At 6.30 he passed about a tablespoonful of urine, described as "olive green," which unfortunately was thrown away. At 9.30 P.M. there had been neither vomiting, purging nor cramps. He had drunk nothing since 5 o'clock, merely gargling his throat frequently with iced seltzer. Had passed "a very small quantity of dark urine," again thrown away. ⅜ grain morphia administered hypodermically. The night was quiet; and recovery was subsequently uninterrupted.

It will be observed that 1½ grain of morphia was injected within 17 hours. The effect of each separate dose was, however, carefully watched, and as the therapeutical action of the drug was noticeable on each occasion, it was clear that absorption was taking place and that there was little or no danger of accumulation.

The epithelial flakes in the stools were carefully examined after staining, under a power of 600 diameters; but amid multitudes of bacteria I failed to discover any form answering either in shape or size *to the comma-bacillus. An attempt at cultivation failed owing to lack of sufficiently stringent precautions* against putrefaction.

The man in whose case death was due to disease of the heart was buried by order of the *coroner after an inquest for which I performed a postmortem examination.*

The patient had been leading an irregular life for some time, and returned home drunk about 11 P.M. on the 4th May. He slept on and off all through the 5th. On the 6th he went out apparently in his

usual health, dined abroad and formed one of a noisy party which broke up at 10.30 P.M., when he went to bed. So far as was known, nothing occurred to put any stress on his heart. He slept well all night, and rose at 8 A.M. on the 7th. He then drank a cup of tea, and lay down again, playing with a child that happened to be in the room. About 9 A.M., without previous warning, he began to gasp, and uttered a shriek, which brought some people immediately to his bedside. He was then speechless, beating his breast with his right hand, and in a few minutes died.

Postmortem, 22 Hours after Death.—Weather very hot. The body was that of a well-built, muscular man about 24. Rigor mortis was passing off, and decomposition beginning. There were no external marks of violence; the skin of the back was deeply infiltrated with blood (postmortem). No fluid of any kind was oozing from the mouth, nose or ears.

On lifting the sternum the anterior mediastinum was seen to be occupied by condensed areolar tissue, firmly adherent to the sternum and pericardium. There were extensive old pleural adhesions on both sides, but chiefly on the left. The lungs were dripping with blood, but were otherwise healthy, the left lung being, however, compressed laterally and posteriorly by encroachment of the heart.

The pericardium was adherent throughout, its cavity completely obliterated. The heart, with the intra-pericardial portion of the great vessels, and some fragments of pericardium which could not be detached, weighed 34 ounces (normal average weight, 12 ounces). The wall of the left ventricle was enormously thickened, its fibres presenting the "feuille morte" tinge. There was no endocarditis, but the mitral valve was largely incompetent, apparently from purely mechanical causes. The left auricle was dilated and slightly hypertrophied. The right chambers were dilated, the ventricle markedly so. The tricuspid valve, which was divided into four segments, showed no appearance of past inflammation, but was incompetent. The calibre of the aorta, from a distance of 2 inches above the sigmoid valves, was not perceptibly increased; its lining membrane for about 5 inches from this point was smooth, but injected. The sigmoid valves were calcified, puckered and completely incompetent, offering no perceptible obstacle to a stream of water poured down the vessel towards the heart. Patches of atheroma of varying size, which had completely eroded the lining membrane, nearly covered the wall for a distance of 1½ inch from the valves. Calcified masses projecting into the lumen of the aorta and firmly fused with the valves occupied the intervals between the orifices of the coronary arteries.

The liver was congested and enlarged, weighing 74 ounces. Its tissue was healthy.

The spleen was friable, and ruptured while being gently drawn forwards.

The left kidney was healthy. The right kidney contained a small abscess surrounding a minute gritty particle.

The wonder, of course, was how the possessor of such a heart and aorta could have lived, and worked industriously as an engineer and knocked about when opportunity offered, without ever suffering sufficiently to make him lie up or even complain. Upon any one of the current theories regarding angina pectoris there was ample reason here for the severest possible angor. In the absence of any history it is difficult to say how the condition arose. A case reported by STOKES and referred to by PETER* may be compared with the one just detailed:—

A l'autopsie le ventricule gauche fut trouvé hypertrophié et dilaté à un degré extraordinaire. L'hypertrophie était limitée au côté gauche du cœur, et le ventricule droit [était] bien loin d'atteindre la pointe de l'organe. Les sinus de l'aorte étaient presque complètement remplis par des dépôts calcaires hérissés de rugosités.

* *Maladies du Cœur*, p. 528.

DR. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Year ended 30th September 1884.

DURING the year, among foreign residents there have been five births and four deaths. Three deaths occurred in the first quarter of the year: one in October, from cholera; in November and December, one death in each month, recorded as typhoid fever; while the fourth death, in September, was caused by acute spreading gangrene, following a shell wound of the leg.

In my Report for the preceding half-year* I gave a brief account of an epidemic of cholera, which made its first appearance here about the 10th August. Towards the end of September the epidemic showed signs of abating. This, however, proved but a brief remission, for the disease raged with varying degrees of intensity and virulence till the end of November, and it was not till the middle of December that cholera cases were no longer reported. From the 1st October to the close of the epidemic, in December, the mortality from cholera among natives is estimated at 20,000. Whilst cholera was prevalent here, it travelled up river, and is said to have proved very fatal among the inhabitants of cities and villages on the Min and its branches. Early in October, up a branch of the Min, distant 700 *li* from Foochow, a Spanish priest died of cholera.

In October and November disease among man and animals was excessive.

Among foreign residents diarrhœa was a common ailment, and there were five cases of dysentery. In November, as has already been mentioned, there was a death from typhoid fever. In this case the thermic range differed so much from summaries of the European disease, and was of so little value as an aid to diagnosis, that, further on, I shall record the case.

Among natives, besides the epidemic of cholera, many cases of typhoid fever were met with. Diphtheria was also encountered, but the extent of its prevalence could not be ascertained.

On the 23rd October I was called to see a Eurasian girl, said to be suffering from sore throat. The patient was 17 years of age, and an inmate of a brothel. She had been ailing for some days; complained of difficulty in swallowing, and pointed out swollen submaxillary and cervical glands. Febrile disturbance was slight, but she seemed very weak. There was considerable swelling of the mucous membrane covering the pharynx, tonsils, palate and uvula, and there were patches of false membrane on the tonsils and uvula.

On the 12th October a boy, 10 years of age, who had been nursed by the Eurasian girl, died of a similar affection; and on the 10th October a girl, said recently to have come from Shanghai, died of sore throat in the same house. As steps were taken to prevent the disease spreading, the mistress of the brothel, fearing that her interests might be involved, would give me no more information. Other five inmates of the same house were said to have suffered from this affection. The patient I attended (the

* Customs *Medical Reports*, xxvi, 39.

first case of diphtheria I had met with in China) was convalescent on the 30th October, but subsequently died of cholera.

From natives I could get little information about diphtheria, and as the disease has not been met with at the native hospitals, I conclude it is but little known in this district.

Among fowls diarrhœa proved very disastrous, and a similar epidemic is said to have existed among pigs. Among cattle a disease whose symptoms resembled those of steppe murrain was epidemic. In November and the early part of December more than one-half of the cows in native dairies were affected, and either died or were killed. Owners said that in former years this disease had been epidemic among their cattle, and as they knew it to be extremely fatal, as soon as the disease was recognised, to prevent total loss, the affected animals were, as a rule, killed for food.

From the middle of December to the end of the period reported on, excepting an unusual amount of malarial fever in February and March, the health of Europeans was exceptionally good.

In January, February, March and April the natives had their annual visitations of small-pox and measles, and during the winter months I learned from several sources that fever had been unusually prevalent and fatal among lying-in women.

Umbilical Hernia; Rupture; Extrusion of several feet of Intestine; Death.—On the 3rd March I was called to see a native infant whose mother died of puerperal fever. Two days after delivery the mother had a rigor, followed by high fever and diarrhœa, terminating fatally on the eighth day after confinement.

The child was 27 days old, and his illness was doubtless due to improper feeding. For some days he had been much troubled with flatulence, and cried a good deal. Since the evening of the 1st March he had cried almost constantly, and on the following morning an umbilical hernia, about the size of an orange, was noticed. About 4 P.M. the coverings of the hernia burst, and the intestines commenced to pass out at the opening. On the evening of the 3rd March, when I first saw the child, he was enveloped in quilts, which the attendants said they had applied to keep the intestines warm. On removing the coverings I found that the greater part of the small intestine had passed out of the abdominal cavity and, deeply congested, distended with gas, and smeared with a loose motion that had recently been passed, lay on the surface of the abdomen. After cleansing the parts with sponge and weak solution of carbolic acid in water, and removing some of the flatus by means of a small aspirator needle, the opening in the abdomen was enlarged (it was found impossible to return the bowel without doing so), the intestines replaced, and the wound stitched up with carbolised silk. Eight hours afterwards the child died.

During the summer the health of the natives was good. Sometimes cholera cases were reported, but on inquiry there was no foundation for the rumours. Although frequently called to see natives supposed to have cholera, I always found that diarrhœa was the ailment.

In October and the first three weeks of November the atmosphere was close, and sometimes warm and muggy. For October the average maximum temperature in the shade was 78°.09 Fahr., and the average minimum 70°.71 Fahr. In November the average maximum was 69°.59 Fahr., and average minimum 62°.03 Fahr. In December the average maximum was 58°.57 Fahr., and the average minimum 51°.08 Fahr.

From the 21st November to the 2nd December the rainfall was considerable, and after the rain came bright, cool, bracing weather in December and January. These meteorological changes may have had some influence in checking disease.

The winter, on the whole, was considered a cold one, and the summer was not so warm as usual. From the middle of June to the middle of September the average maximum temperature in the shade was 86°.99 Fahr., and the average minimum 82°.31 Fahr. August was the hottest month, the average maximum being 88°.09 Fahr., and average minimum 82°.31 Fahr. Early in February the mountains to the north-west were covered with snow, and there was a strong freshet in the river. The rainfall in March was 4½ inches. From April to September the rainfall was about 28 inches, being greatest in April (6½ inches) and smallest in May (3½ inches). Early in April, and again in the third week in June, the Min overflowed its banks. The surrounding low-lying country was flooded, and the canals about the city and suburbs, and many of the streets in the southern suburb, were thoroughly washed out.

Thunderstorms commenced as early as March, and throughout the summer were of frequent occurrence. Wind and rain storms were also common. In marked contrast to the previous summer, on several occasions the wind blew with typhoon force.

Typhoid Fever.—On the morning of the 4th November I received a note stating that since midnight the writer had been kept awake by pain in his stomach. On visiting him he said that on the previous day he had been playing in a cricket match, and that just before going to the wickets for his second innings *he was suddenly seized with frontal headache and giddiness, which compelled him to go home instead.* In the evening he felt much depressed, had no appetite, but took some soup and went to bed. He attributed his indisposition to exposure to the sun.

Patient was 28 years of age, and although he had never been physically strong, had during his six years' residence in the East enjoyed comparatively good health. Since he came to Foochow, 14 months ago, I had treated him for the following ailments. In November 1882 a dislocated shoulder, caused by throwing in a cricket ball; malarial fever in March 1883; and slight diarrhœa in August last.

When the attack of malarial remittent fever commenced, severe epigastric pain, similar to that in present illness, was the sole complaint. The thermometer in the axilla registered 104°, and there had been no history of rigor or chilliness. Hot fomentations to the abdomen removed the epigastric pain, and on the evening of the 8th March, after four milder daily exacerbations, the fever, by free perspiration, subsided. On the mornings of the 5th and 7th quinine was given in 7-grain doses every 10 minutes till 28 grains had been administered. The diarrhœa on the 20th August was quickly checked by a few doses of acetate of lead and opium. From the cessation of the diarrhœa in August down to the present illness no complaint had been made.

When I saw him at 8 A.M. on the 4th November he had a pained expression of countenance, and was lying on his back in bed, with knees drawn up, complaining sorely of a constant ill-defined pain in the epigastrium. Beyond slight tenderness on pressure in the lower right side of epigastrium, nothing abnormal was detected. *His tongue was moist, with slight white fur; no desire for food or drink.* Two copious, dark-coloured, pulpy motions had been passed during the night. Pulse, 80; heart and lungs normal; temperature in axilla, 102°. Applied hot fomentations to abdomen.

By noon pain in epigastrium had become almost unbearable, and a hypodermic injection of morphia had to be given. In the evening pain had almost gone. Pulse, 80; temperature, 101°.

5th November, morning.—Feels pretty well; no pain anywhere. Patient wished to get up, but was not allowed. Tongue moist, slight white fur. Pulse, 80; temperature, 101°. Gave 28 grains of quinine in 7-grain doses every 10 minutes. Evening.—Feels very comfortable. Pulse, 80; temperature, 101°. Had been drinking milk and seltzer water freely during the day.

6th November, morning.—Ears singing from quinine given yesterday. Tongue moist, slight white fur. During the night had vomited several times, and had passed five loose, yellow motions containing some mucus. Abdomen somewhat tumid. Pulse, 80; temperature, 102°. Gave small quantities of milk

and lime water every hour. Evening.—Tongue red at edges, white fur in centre. Since morning had at times pain in stomach, but no sickness or diarrhœa. Pulse, 80; temperature, 103°.2.

7th November, morning.—Much depressed. Tongue dry, white fur in centre, red at tip and edges. During the night had vomited once, and passed two large, loose, yellow motions, with flocculi. Abdomen was tumid, and there was some tenderness on pressure in the right iliac fossa, where gurgling could be produced on palpation. Pulse, 92; temperature, 103°.6. Gave quinine as before. The body to be sponged every four hours with tepid water. Evening.—Slept a good deal during the day, but did not seem refreshed. Tongue tremulous, dry, white fur; much thirst. Five loose, yellowish motions since morning. Pulse, 92, regular; temperature, 103°.8. Ordered a lead and opium pill every four hours.

8th November.—Had a fairly good night; ears singing. Tongue dry; white fur in centre, clean at edges. During the night three slight, yellowish, loose motions. Pulse, 80; temperature, 102°.4. Evening.—Had slept a good deal during the day. Tongue red at edges and tip; dry, white fur in centre. A feeling of distension in bowels, which were once moved since morning. Ordered 2 drachms of whiskey in milk every three hours.

9th November, morning.—Tongue dry, white fur. Bowels had been twice moved before 2 A.M., when he had severe epigastric pain, followed by retching and vomiting, after which he slept soundly. Pulse, 92; temperature, 102°.2. Evening.—Slept much during the day, and says he feels better, but looks heavy. Had a loose, yellowish motion, with whitish flocculi. Considerable tenderness in the right iliac fossa; spleen could be felt below the ribs. No eruption over lower chest or upper abdomen could be detected. Pulse, 100, regular; temperature, 103°.6.

10th November, morning.—Slept well, and says he feels better; seems very deaf. Tongue very tremulous; dry, white fur in centre. At 11 last night had one loose, peasoup stool. Pulse, 94, weak; temperature, 103°.2. During the forenoon he had been troubled by hallucinations. At 3 P.M. I found him out of bed and delirious, but on reasoning with him he went back to bed. Ice cap to head, and had body sponged every three hours with cold water. During the afternoon his thoughts were much confused; at times talked loudly and incoherently. Evening.—Seems more sensible. Tongue dry, white fur in centre. 6 P.M.—Had a loose, yellow motion, with flocculi. Pulse, 94; temperature 103°.2. Ordered a chloral draught to be given at 10 P.M.

11th November, 7 A.M.—Would not take the chloral draught ordered last night. All night could not sleep; thoughts wandered much. Tongue dry, brown fur in centre. One loose, peasoup stool at daybreak. Abdomen tympanitic, and very tender on pressure, especially in the right iliac fossa. No eruption could be seen. Pulse, 120, regular; temperature, 103°.8. In the forenoon was very restless; delirium continuous. At noon temperature was 102°.9. Tried to give a chloral hydrate draught, but he spat it out. Hitherto he had daily consumed from 2 to 3 pints of milk, to which lime water had been added, and some whiskey; but after tasting the chloral draught he refused to swallow anything, and all nourishment had to be given per rectum. At 4 P.M. gave an enema of chloral hydrate, which was followed by four hours' sleep. When he awoke temperature in rectum was 105°; pulse, 120, weak.

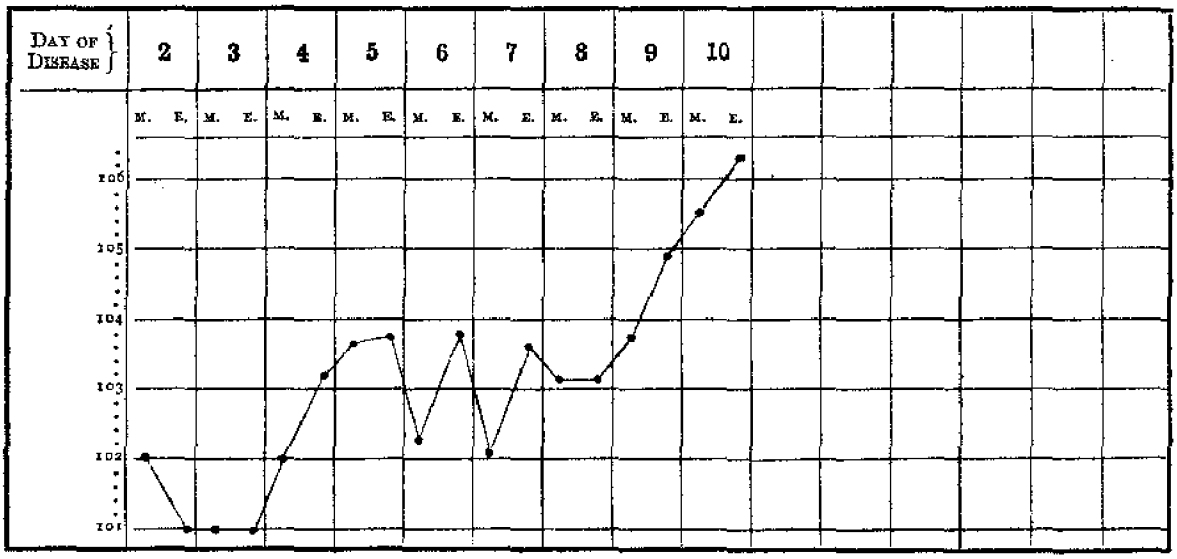
12th November, morning.—Throughout night, coma vigil, carphology. Passed urine and fæces involuntarily. Abdomen tense, and tender on pressure. During the night, four wet packs, each of 20 minutes duration, reduced temperature only 1°, for half an hour. At 5 A.M. temperature had risen to 106°.2. The gradually cooled bath was then commenced. 7 A.M.—Pulse, 140, thready; temperature, 105°.6. During the day, continued unconscious. Baths reduced temperature only a little, and for brief periods. At 5 P.M., after a bath, there was slight return of consciousness, and a few questions were rationally answered. 8 P.M.—Respirations, 68; pulse, very weak, 140; temperature, 106°.2.

13th November.—12.30 A.M., passed involuntarily a large motion; and at 1 A.M., after vomiting some coffee-ground fluid, expired.

Postmortem, 13 Hours after Death.—Only the abdomen was examined. Congested patches of mucous membrane could be seen shining through the peritoneal coat of the ileum. The mucous membrane

of the small intestine, generally, was swollen and congested. Adhering to the mucous membrane of the duodenum was a considerable amount of brownish, sticky fluid; and lower down, the intestinal canal was lined with gelatinous yellow mucus. In the ileum, cæcum, ascending colon, and mesenteric lymphatic glands the characteristic lesions of enteric fever were well marked. The solitary and PEYER'S glands were greatly enlarged. Some of PEYER'S patches were as large as 50-cent pieces, and one patch was 2 inches long by 1 inch broad. The solitary glands were as large as split peas. The mesenteric glands were swollen and vascular. *The spleen was three times its natural size. The liver was normal as to colour, perhaps a little* hyperæmic; and the gall bladder was filled with ropy mucus.

The accompanying chart shows the fever curve. Up to the evening of the 11th November the temperature was taken in the axilla, at 9 A.M. and 7.30 P.M. From that time it was taken in the rectum.



The following case illustrates the simplicity and efficiency of MANSON'S operation for liver abscess.*

LIU SONG, aged 39, a peasant from Minchiang, was admitted under my care to the Foochow Native Hospital on the 6th June 1884. He complained of feeling generally wretched, and pointed out a swelling in his right side which caused him much uneasiness and pain when he coughed.

In October last, while labouring in the fields on a cold, wet day, he caught cold, followed by fever of remittent type, and pain in region of liver, which confined him to bed. After 14 days the fever abated and he was able to move about; but considerable uneasiness remained in his side, and caused him to give up work. The swelling he pointed out first attracted his attention in February. By the end of March a poor appetite and profuse perspirations during sleep induced much loss of flesh and great weakness.

He has never been robust. In early life he had measles and small-pox, and since the age of 20 he has been laid up several times a year with headaches, colds and ague, which last-mentioned disease is very common in his country. For 10 years his spleen has been enlarged. He has never had diarrhœa or dysentery. He does not belong to the poorest class, and has always been able to procure a diet of rice and vegetables, with fish or fowl or pork; and for the past eight years he has, *before retiring for the night, been in the habit of drinking as much native wine as imparted a glow to* the surface of his body and produced a general feeling of serenity.

* Customs *Medical Reports*, XXVI, 50.

On admission he had a stooping gait, and was much emaciated. His face was slightly jaundiced, and he looked sad and discontented. In the right hypochondrium and in epigastrium was a tense, rounded, smooth swelling, continuous at its base with the right lobe of the liver, and projecting downwards into the right lumbar and umbilical regions. The tumour sinking with inspiration and rising with expiration caused eversion of the lower right ribs; was dull on percussion, and but slightly tender on free manipulation. Indistinct, deep-seated fluctuation was detected where the tumour was most prominent. Hepatic dulness in right mammary line, including the tumour, was 9½ inches. Posteriorly and upwards the area of liver dulness was but slightly increased. The left lobe was somewhat larger than normal. Area of splenic dulness was much increased, the anterior border of spleen being felt 1 inch to inner side of left nipple line. Tongue moist and slightly furred; poor appetite, but no sickness or vomiting; bowels rather confined. Pulse, 100; heart and lungs normal; but had a cough, which increased his general discomfort. Temperature in mouth, 100°.5; and perspires much during sleep. Urine, sp. gr. 1,020; slight deposit of lithates; no albumen.

Into the most prominent part of the tumour, 1 inch from the costal border and 1 inch to the inner side of right nipple line, was introduced an aspirator needle, and 7½ ounces of chocolate-coloured pus drawn off by aspirator. Was ordered quinine and dilute nitric acid, milk and beef tea.

7th June.—Felt some relief from the small quantity of pus drawn off yesterday.

11th June.—The instruments as described by Dr. MANSON having been provided by a native instrument maker, dressings, etc., being ready, and the patient having been brought under the influence of chloroform, with strict antiseptic precautions, the large trocar was introduced into the abscess at the point previously punctured by the aspirator needle. 56 ounces of thick, chocolate-coloured pus, containing shreds of liver tissue, welled out. The drain having been inserted, the canula withdrawn, strings cut, and stilette removed, antiseptic dressings were applied and syphon apparatus completed. A hypodermic injection of morphia was given. In the evening, five hours after operation, 31½ ounces of pus had passed into the graduated receiver placed on the floor, 2 feet below the level of the patient (the receiver at the end of the syphon had been graduated in order that from time to time the amount of discharge might be accurately noted and any blocking of the drain at once detected). The operation was followed by almost complete relief; temperature fell to 99°, and pulse to 88.

12th June.—Slept well all night, and feels very comfortable. 6½ ounces of pus passed since last evening.

13th June.—Complains of pain in punctured region, the pain having commenced yesterday afternoon. Tongue a little furred, and bowels not moved since the morning of 11th. 8 ounces of pus passed since yesterday.

14th June.—Slept well without morphia. The pain in punctured region is now only felt when he coughs. Bowels moved by enema. 4 ounces of pus passed since yesterday.

15th June.—Slept well; no pain anywhere, and feels quite comfortable. Tongue moist, clean; appetite much improved. 4 ounces of pus passed since yesterday. Bowels to be moved daily by enema.

16th June.—Still improving. 4 ounces of pus passed since yesterday. Owing to shrinking of the abscess, the abdominal roller became loose, and fearing dragging on the drainage tube, with antiseptic precautions the dressings were changed.

21st June.—Still doing well. 1 ounce of pus passed daily since 16th. Complained of some irritation under the dressings, which were removed under the carbolic spray, as before. Under the gauze there was extensive carbolic eczema. Salicylic cotton wool was now used instead of gauze.

25th June.—1 ounce of pus had passed daily since last dressing. Patient complained of feeling generally out of sorts. Tongue was slightly furred, and temperature a little up. Under the antiseptic spray, the dressings were taken off and drainage tube withdrawn from side. On removal of the old drain I failed to introduce a new one without the aid of the stilette. The liver had almost assumed its normal dimensions, so that the drainage tube canal had become tortuous.

27th June.—One ounce of pus passed since 25th. Patient feels well. Tongue moist and clean; appetite good; there is, without enema, a motion daily. All trace of night sweats has disappeared; much flesh and strength gained.

29th June.—About 6 drachms of yellow pus passed since 27th.

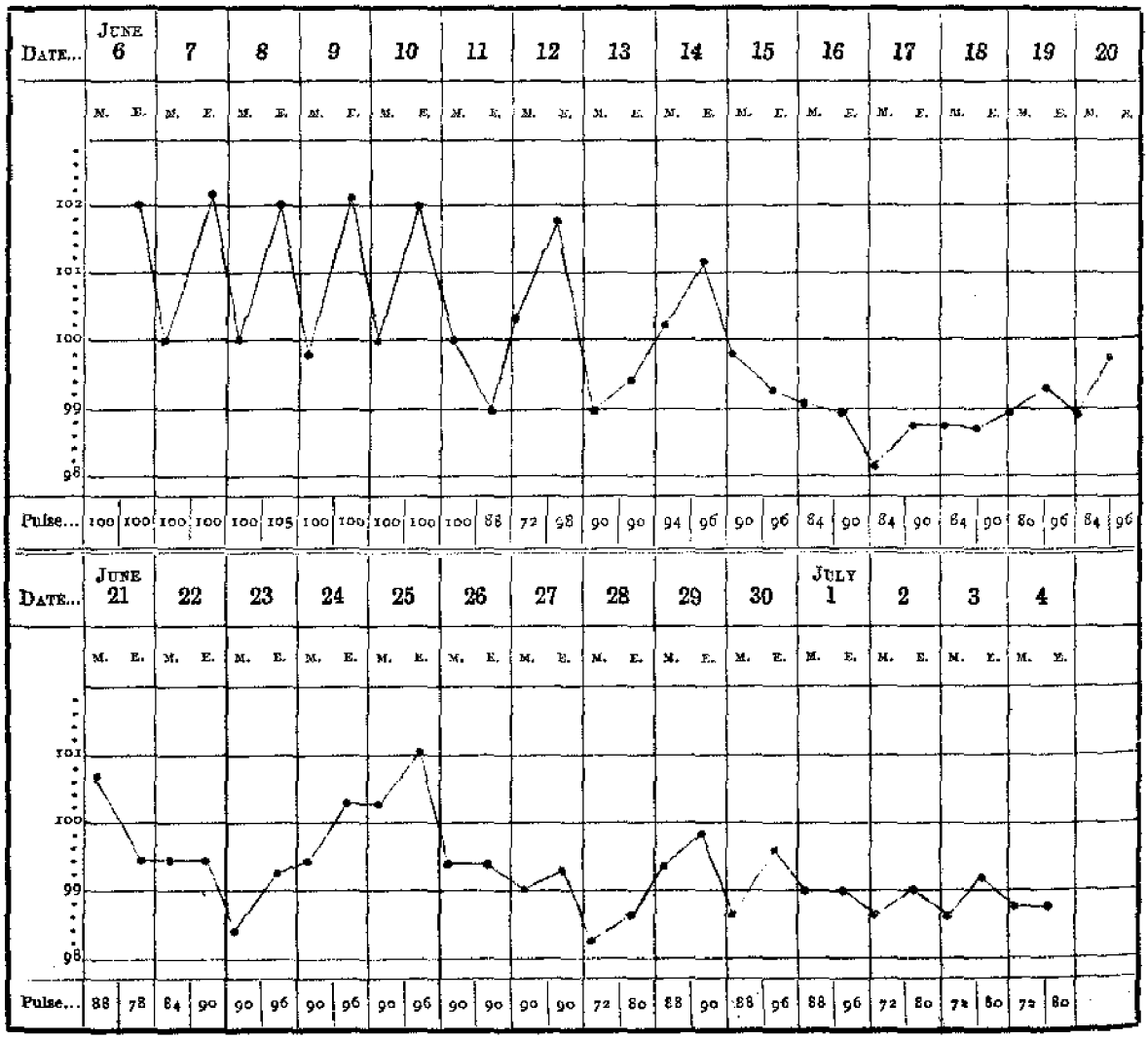
7th July.—About 1 drachm of watery pus escapes daily. Under the spray, dressed wound. Removed the syphon and cut 3 inches off the drainage tube, which brought it down to a level with the skin, and left 5 inches of drain in the sinus. The end of drain was covered with salicylic wool.

4th August.—Patient feels quite well. Since 4th July temperature never exceeded 99°, and varied between that and normal. Since 7th July the wound had every second day been antiseptically dressed, the drainage tube withdrawn a little, and a piece cut off its proximal end.

10th August.—All the drain was removed.

18th August.—The wound having completely healed, and patient feeling well, he was discharged.

The annexed chart indicates the course of his temperature and pulse.



DR. C. H. JOHANSEN'S REPORT ON THE HEALTH OF TAMSUI AND KELUNG

For Four Years ended 30th September 1884.

THE annexed table of meteorological observations, extending from the 1st April 1882 to the 31st March 1883, I have selected to give the reader a general idea of the climate of our port. The table I owe to the kindness of the Imperial Maritime Customs here; the observations have been made in the quarters for the out-door staff. These quarters are situated in a building at the entrance of the harbour, only a little above the level of the sea. The other European residents live, with few exceptions, in bungalows on the hills, about 100 feet above the Custom House. The mercantile part of our little community stays during the tea season, which lasts nearly nine months, in Twatutia. This is a large town about 9 miles up the Tamsui river. Kelung, the port on the north side of this island, has gradually lost its foreign residents. During the time the Government coal-mines were being sunk we could count as many as 15 adult males there, and some ladies and children.

The climate of North Formosa is characterised by long and heavy rains, the year 1880 and 1881 showing this in a marked degree. During the summer of 1883, however, there was so little rain that the harvest suffered considerably. This last summer (1884) we have had a good amount, but as the temperature remained exceedingly low, foreigners have not suffered much.

During the years previous to my arrival, Tamsui had a very bad reputation as being an unhealthy place for foreigners to live in. I had had frequent opportunities for the study of the very deleterious effects of its climate in patients coming over to Amoy to restore their health. The symptoms were nearly always the same, viz., high fever without any intermission or remission, violent gastric disturbances and affection of the brain. Several of the seafaring people were so liable to catch this disease on every visit to Tamsui that they were compelled to leave while their ships were trading to this port. On my arrival here in July 1880 I found half the Hobac* community suffering from malarial poisoning and subjected to attacks of continued, remittent or intermittent fever. New arrivals in the summer generally fell victims to the infection during the first few weeks. The only remedy against frequent relapses lay in leaving the port. Quinine, as a preventative, in small doses, repeated every day, was in fresh cases of little use. It was invaluable in the remittent and intermittent forms, but in the continued form it had no effect whatever. The influence of malaria is seconded by the direct effect of the sun on the brain (insolation), and the automatic temperature regulator in the medulla being paralysed, continued fever is the result.

* Hobac is the native town of which Tamsui is the port.

During the last four years the sanitary condition of this place has obviously improved very much. The number of European residents is too small, and they live under conditions too various, to make it possible to collect material of any statistical value. But the cause of this beneficial change is no doubt the improved condition of the soil of North Formosa. The camphor export has caused the Chinese to cut down the woods as far as the savage aborigines have allowed the Chinese pioneer to penetrate; after this, the virgin soil, covered in many places with high jungle grass, has been turned into tea plantations. The exposure of this soil to the sun, after turning it over for the first time with the plough, caused the development of malaria poison during former years; but this process being finished in our vicinity, we enjoy comparative immunity from fever. That fever under these circumstances originates and emanates from the soil is shown by the fact that ships lying in our harbour used to dread the very strong southerly land breeze which blows often for days and weeks during the summer. When great patches of land were ploughed for the first time, this wind was loaded with poison rising from the exposed rotting vegetation; now this wind, although just as hot, dry and disagreeable as before, is comparatively innocuous.

The great majority of the cases of malarial poisoning I now meet are caused by exhalations from the soil in the immediate vicinity. It seems to be of no importance whatever whether houses are situated on the hills or in the valleys or even in the midst of the Chinese town. But there exists one protection against these exhalations. They rise only during the night, and, under ordinary circumstances, not over 10 feet from the ground.

Of this fact I have had a very clear proof in my own house. My sleeping-room is about 10 feet from the ground. In October 1881, during the stay of a sick friend in my upper rooms, I was compelled to sleep for five nights on the ground floor. At the end of this time I got fever, and for the first five days without any intermission. I experienced this on four different occasions, even if this staying on the ground lasted for half a night only.

During winter, however, we may sleep on the ground floor without fear. All the old houses in Tamsui are built in the bungalow style on the hills; this is, according to my experience, a mistake. The proper residence for a European here ought to consist of two stories, the upper story to contain all rooms used at night. This is the style of building in Twatutia, and these houses, although low-lying and surrounded by Chinese shanties, far away from the invigorating influences of the sea, protect their inhabitants from fever; while the airy bungalows in Hobac offer no protection whatever.

Two deaths, which occurred in Kelung during the last four years, cannot be attributed to the climate. One was the case of a master of a vessel who died of phthisis, the other a Tidewaiter who had long been in broken-down health, and was found dead.

The history of this latter case is remarkable. Five years ago he had been in the Shanghai Hospital for several months, under Dr. JAMIESON'S care, and there seemed to have been no doubt about the existence of an aneurism of the aorta. He had been recommended to take iodide of potassium, and he had in fact taken as much as 60 grains three times daily. This treatment he continued for several months; altogether he must have swallowed nearly 2 lbs. of the salt. Apparently this enormous quantity had done his constitution considerable injury, besides producing a slight catarrh of the lungs and stomach, which

troubled him much and induced him to try all sorts of medicine, patent and other. After the use of the potassium the symptoms of aneurism disappeared, the patient during the last two years of his life showing no signs of organic disease.

The postmortem showed a considerable swelling of the mucous membrane of the respiratory tubes and stomach. Death had been caused by the escape of about 2 lbs. of blood through a very small rent in the arch of the aorta, near the innominate. The blood, which was not coagulated, was found in both pleural sacs, surrounding and compressing both lungs. The aorta itself was in a state of atheromatous degeneration, and a fresh atheroma had ulcerated, through which the blood had escaped. The width of the vessel was not altered; no dilatations to be seen in any place. The previous existence of an aneurism seems to be an impossibility. In spite of attentive search, no trace of such a lesion could be found.

Every autumn we have had a cholera epidemic among the Chinese population here. This year it has been of less importance than in 1883. Although often spoken of as Indian cholera, it seems to have less infective power. The symptoms are in severe cases the same as in Indian cholera, viz., rapidity of attack, sudden collapse of the features, agonising pains in the calves, copious rice-water stools, total suppression of urine, movements of the limbs after death. Patients die in a few hours, and unless taken quite at the beginning, no remedy has any effect whatever, as nothing, not even a hypodermic injection of ether, gets absorbed during the collapse. The Chinese are fully aware of the danger of the disease, and generally quietly lie down to die. During the autumn of 1883 whole families were exterminated by cholera; but probably all the victims were living on insufficient vegetable diet, consisting, amongst farming people, nearly entirely of sweet potatoes. There seems to be not the slightest danger for any European or Chinese who takes proper precautions as regards diet and exposure.

The most interesting disease among the Chinese population here is leprosy. It seems astonishing that so little trustworthy information about this disease exists. It shows itself in an acute and chronic form, and attacks about 1 per cent. of the whole population, male and female. During the four years I have remained in Tamsui I have seen in the Chinese Hospital here above 150 cases, the total number of patients being about 8,000 in this time. My observations have led me to the following conclusions:—

The acute form is more rare than the chronic, and attacks otherwise healthy people, or, oftener, people suffering from chronic leprosy. The disease begins with a strong fit of ague, during which the temperature rises to 105° or 106°. This high temperature lasts during the whole attack, generally about eight days; then remissions begin, and the fever subsides gradually. During the fit of ague the patient gets red patches, particularly on the forehead and face, and also on the extremities, but rarely on the chest or abdomen. These patches look very like urticaria. They do not itch, but are very hot and tender on pressure. Many of them exude lymph, and even pus; the epidermis is softened and destroyed, the skin presenting the appearance of acute eczema. Some patches remain in this stage of their development; in the majority, however, the destruction goes on, and they form extensive superficial ulcerations. After about two weeks these ulcerations heal, and leave a cicatrix, which is more or less anæsthetic. The disease seems not to be contagious. The much more frequent chronic form of leprosy has often been pronounced a contagious disease; but this is certainly untrue. In over 40 cases I have made direct inquiries about the origin of the disease, and have found no case in which the patient

could trace his affection to infection from another leper. If leprosy was a contagious disease, how could it be possible that in nearly every village exist one or two isolated cases who very often do not know what they are suffering from, because they have never seen another leper? Moreover, I have not found a single case in which a leper had a leprous wife or children, or where a leper had been accused of having infected a healthy man. Syphilis has been often called the cause, or one of the causes, of leprosy; but this is not the case. I saw a child of 7 years, a leper, whose parents were both healthy; the child had sisters and brothers, older and younger than herself, enjoying perfectly good health. In one case a leper acquired a hard sore while under treatment; a roseola syphilitica made its appearance in due time on the abdomen, which was covered with leper spots. I have seen many lepers with secondary or tertiary symptoms dependent on disease contracted before or after they fell sick of leprosy. Leprosy extends equally over the whole north end of Formosa, and the conditions of life of the mountaineer who fights with the savages and of a fisherman in Kelung are sufficiently different to make it impossible that they could suffer from the same disease in consequence of one fault in their diet or one peculiarity of the soil. Chinese doctors as well as laymen consider the disease to be the consequence of drinking rice spirit. Only the similarity of the red swollen face of a drunkard to the face of an unhappy victim of leprosy seems to have led to this idea.

Among all my cases there was not one that could be definitely classed as belonging to either of the forms described in text-books. After the disease has lasted some months, every leper presents the following appearance. General health little or not at all affected; face covered more or less with dark red spots, sometimes approaching the appearance of a European face through accumulation of all colour on the cheekbone, the rest of the skin being whiter than that of the ordinary Mongolian of good health; ears shapeless and insensible to touch. These spots in the face get larger as the disease progresses; the subcutaneous tissue develops great masses of small tumours (this gives to the face the well-known hideous leonine appearance), or they disappear and leave white anæsthetic patches. There are fewer of these spots on the body and on the upper part of the arms and legs. Below the elbows and knees we find again more. The backs of the hands and feet are generally quite covered with them. The fingers are often of very dark colour; the finger tips clubbed. In the majority of cases we find that some portion of a limb has been lost through destruction of a joint. Under the ball of the foot or under the heel is a deep ulcer without any granulations or tendency to heal. *Upper and lower extremity as far as elbow or knee have lost sensibility to touch* and to pain.

I can recommend chaulmugra oil as a remedy in this formidable and mysterious disease. *We are in the habit of giving the oil as we get it sent from London, in pill form, each* pill containing 5 grains. The patient takes three pills daily after his meals, and continues this treatment for about six months. The best recommendation of this treatment is the fact that nearly all our patients who have commenced have carried it out to the end, coming often from long distances to fetch their pills every month. An improvement generally takes place after one month. In some cases it was quite surprising to see the spots gradually getting paler and disappear, or sensibility coming back to places which had been anæsthetic for years. The *most trouble is to get the indolent ulcers on the soles to heal up, as Chinese generally neglect* to keep their wounds clean, and cannot or will not stop walking.

Meteorological Table.

Month.	Thermometer.				Barometer.		Rain.	
	Dry Bulb.		Wet Bulb.		Highest.	Lowest.	Number of Days.	Rainfall.
	Highest.	Lowest.	Highest.	Lowest.				
1882.	°	°	°	°	*Inches.*	*Inches.*		*Inches.*
April	86	56	80	50	30.31	29.88	6	5.83
May	86	66	77	66	30.09	29.70	10	12.48
June	92	64	85	64	30.05	29.80	2	1.50
July	94	76	90	70	30.30	29.16	4	4.03
August	89	70	89	70	30.11	29.17	11	20.44
September	94	72	90	71	30.11	29.50	4	0.90
October	89	70	84	64	30.29	29.80	9	4.00
November	84	53	76	51	30.46	30.08	13	13.20
December	81	41	75	40	30.70	30.10	12	5.70
1883.								
January	74	46	71	43	30.55	29.85	9	4.42
February	77	47	71	44	30.48	30.07	8	3.69
March	73	50	68	46	30.42	29.85	17	9.33

DR. W. W. MYERS'S REPORT ON THE HEALTH OF TAKOW

For Two Years ended 31st March 1884.

DURING the period under review the general health, in as far as climatic causes are concerned, may be said to have been as favourable as in past years. There were five deaths:—

1. 1882. Male resident: organic degeneration, with mixed fever. Anping.
2. 1883. „ „ long-standing phthisis. Anping.
3. „ „ „ cardiac disease, fatally intensified by delirium tremens. Anping.
4. „ „ „ aneurism of aorta. Takow.
5. 1884. Female resident: sewer-poisoning. Takow.

Cases 1 and 4 are particularly interesting, by reason of their bearing on tissue changes, consequent on alcoholism and syphilis. In the first, nearly every organ and important vessel in the body presented more or less signs of degeneration, and from the state of the vessels, a condition favourable for the development of aneurismal lesions was shown, though no vascular tumour had actually formed. No. 4 was a typical case of aortic aneurism, no doubt of enthetic origin.

Some years ago a medical man of considerable experience in China, referring to the numerous instances of fatal aneurism which happened to be startling the public at that time, expressed a very strong opinion that they might in most cases, out here at least, be traced either to intemperance in the use of alcohol or to syphilis.

I assume it is an accepted truism that not long ago the use of alcoholic stimulants, either as a sign of good fellowship or as an inaugurator of acquaintance and business, was carried to an extent far overstepping the widest limits even an indulgent physiologist would admit safe; and yet, as showing the small extent to which social standards of moderation may be trusted, how comparatively few (if any) of those under special notice ever lost command either of their intelligent capacity for work or of the right to be considered most respectable members of society. Nevertheless pathological changes were being surely wrought, and often resulted *in the disasters which at one time followed each other with such conspicuous frequency*. Times have changed considerably; life has become more settled, and its domestic ties more palpable, if not more pressing; while the temptations to alcoholic indulgence have in a measure disappeared.

Take as the type of a moderate consumer the individual who never drinks anything before 11 A.M. (DR. KING CHAMBERS suggests this as the interrogatory test of asserted "moderation"). Assume that at that hour he takes the seductive "cocktail," *i.e.*, 1 oz. of gin (= say .50 oz. absolute alcohol); suppose he does not imbibe until tiffin, when he allows himself, say, 1 pint of beer (= .90 oz. alcohol), with two glasses of sherry (= .77 oz. alcohol). He then goes on until 4 or 5 P.M., when he will take, say, one glass of whiskey and water (= .50 oz. alcohol), or it may be three glasses of sherry (= 1.17 oz. alcohol); he then goes on to dinner, when he

takes, say, another pint of beer (= .90 oz. alcohol), or, say, two glasses of claret and water (= 1.20 oz. alcohol), with two glasses of sherry (= .77 oz. alcohol). Before retiring at night he takes a glass of whiskey and water (= .50 oz. alcohol). Thus during the day an "extra-moderate drinker" may easily consume between 4½ and 6 ounces of pure alcohol, or double the quantity most authorities fix as the extreme limit of safety. (The strengths of the various beverages are taken from BRANDE.)

To a perfectly healthy man, though possibly not always necessary, it would not seem that alcoholic liquors to the extent of the equivalent of 2 oz. of absolute spirit in the day do any more harm than the quantum of pepper, vinegar or pickles which one often takes to promote digestion.

One cannot scientifically class alcohol as a food necessary to the normal man; but as a luxury, enjoyed within physiological limits, it may be taken by the majority of healthy persons, not only with impunity but according to temperament, with a certain amount of mental content. Daily experience proves how indispensable alcohol is as a medicine, whether applied to call up reserves of force, temporarily retard tissue change, or produce other beneficial chemical and physiological results.

When observing men under the stress of violent exertion, one sees that within wide limits, while the stimulus of exercise lasts, the necessary adjustment between the demand and supply of nervous energy is kept up with that exactitude only possible to natural processes, which no artificial effort can adequately afford. Therefore, if alcohol be taken at this particular period, the naturally adjusted balance is disturbed, and although at the time the exertion may be less felt, the reaction after the stage of activity being proportional to the amount of nervous force previously active, all that portion called up by the artificial stimulant contributes to the sequent depression. On the other hand, the inevitable reaction may advantageously be toned down by the absorption of small quantities of alcohol, taken after the cessation of labour. We may take the condition in which a man is "too tired to sleep or eat." Here the operation of nature's ordinary restorer is kept off by the consequences of what I may call the residual momentum of previous energy. As the runner finds it best to gradually slacken his pace after passing the winning post, so may alcohol act as the gentle equalising medium between vigorous action and perfect rest. Of course in many cases other stimulants, such as tea or coffee, do as well, and often better; but this is a mere matter of degree. Rational views as to the limits within which the consumption of alcohol should be confined are enforced by the pathological appearances too often exhibited on the postmortem table. The following case may be taken as an illustration.

X. Y., aged about 34, of unusually robust physique, well shaped and splendidly developed. Had been resident in China 15 or 20 years, during which time he had enjoyed perfect health. Had been noted as a hard and intelligent worker, was much given to athletics, and although not abstemious, was considered by himself and others as moderate in his consumption of alcohol. In the early part of 1880 my patient passed through an attack of that mixed fever (the so-called typho-malarial form) which I have in a previous Report described as prevalent at Taiwan-fu. As removal to Takow is usually all that is necessary in order to put an end to these attacks, which but for the temperature curve might excusably be mistaken for typhoid, the patient was brought to Takow, and improvement seemed to have set in. Making, however, a sudden movement from bed to go to an adjoining room, he had barely time to be helped back when he

fell on the bed, dead. Although enlargement of the heart had been obvious enough for some time, there had been a total absence of any symptoms of cardiac weakness, which one would have thought incompatible with the exertion he was capable of, and actually took, but a short time prior to being laid up.

At the postmortem, held seven hours after death, the surface of the body was loaded with fat, and the muscles when cut through left a greasy stain on the knife. Some, *e.g.*, pectoralis major, deltoid, biceps and transversalis abdominis, though retaining their original shape, showed but very little remnant of unaffected muscular tissue. On opening the thorax the heart was seen to be much enlarged, and covered with a thick layer of fat. The right auricle when touched was felt to be pulpy, and without any unusual effort the walls gave way and the fingers slipped into the cavity.

Under the microscope the muscular tissue generally seemed to have given place to fat globules, and in other portions the fibres were seen to be undergoing atrophy by breaking down of the fat molecules. Atheromatous patches were present on the endocardium, but the valves, strange to say, showed little or no change. The aorta for its whole length, in the thorax at least, exhibited extensive atheroma; while fatty changes could be observed in the coats of the smaller vessels. Lungs normal, well developed.

Liver much enlarged, smooth surface, yellowish tint, mottled, leaving greasy stain on knife; extensive infiltration of fat globules visible under microscope. Kidneys enlarged, capsule easily separable, surface mottled. General pallor on section. Under microscope, fatty deposit well marked.

There was thus abundant reason for the sudden termination of life, and the only grounds for surprise are that the subject was in the enjoyment of such apparent good health up to so short a time before his final attack. What he might have been with so splendid a build and original constitution, had extraneous influences been avoided, can now be only a matter of conjecture. That he could not have lived much longer without some destructive arterial lesion occurring, the general state of the vascular system made evident.

Here, then, we have had an opportunity of seeing the parts in a condition verging on aneurismal changes, and are able to appreciate the transformations that further progress in disease must have brought about. In the following case we see these lesions fully established; and though from a cause supposed to share with alcohol the responsibility of production, is none the less interesting and confirmatory of our primary assumptions.

A. B., æt. 40; had been 15 or 20 years in China, some portion of it in employment on shore, while at other times he served on board ship. Had always been a very abstemious man, and, up to about six months before his death, in the enjoyment of ordinary good health.

Some years ago he contracted syphilis, and after passing through the usual secondary manifestations, seemed to recover. About two years later, however, while sitting quietly in a room talking, without any apparent provocation, mental or physical, a vessel suddenly gave way on the dorsum of the penis. There was considerable hæmorrhage before a surgeon could be got, who eventually had to tie the ruptured vessel. From that time he seemed to be free from any cause for complaint, doing his duty, and taking exercise with complete ease and comfort.

About five months before he came under my notice he had carried a child to the top of a small hill, and on putting it down said he distinctly felt as if something had given way in the upper part of his chest. From that period onwards he complained of more or less uneasiness in the parts, until what he called a severe attack of bronchitis, with some dyspnœa, caused him to pay more attention to his condition.

He still, however, refrained from seeking medical aid, assuming that change of air was probably all he needed to put him right, and for this purpose took a trip to Amoy. He had not been there long before his state got so bad as to necessitate his being admitted into the Seamen's Hospital at that port, and

of course, as soon as he was subjected to medical examination, the true condition of affairs was discovered. On being informed of how matters stood, he elected to return to Takow, and soon after his arrival I saw him professionally for the first time. He was suffering from frequent short cough, with occasionally severe paroxysms of dyspnœa.

Voice much altered, husky, and at times almost whispering; expiration prolonged; laryngeal stridor well marked. The trachea at its lower part pushed backwards, and almost immovable; above the sternum and along the clavicle, a little beyond the sterno-clavicular articulation, a distinct swelling could be felt; it pulsated visibly. On percussion, dulness was marked from below the junction of the sternal with the middle third of the clavicle nearly over to the articulation of the left clavicle. The dulness seemed to run into that of the heart. On auscultation no particular bruit could be heard, the heart sounds being apparently normal.

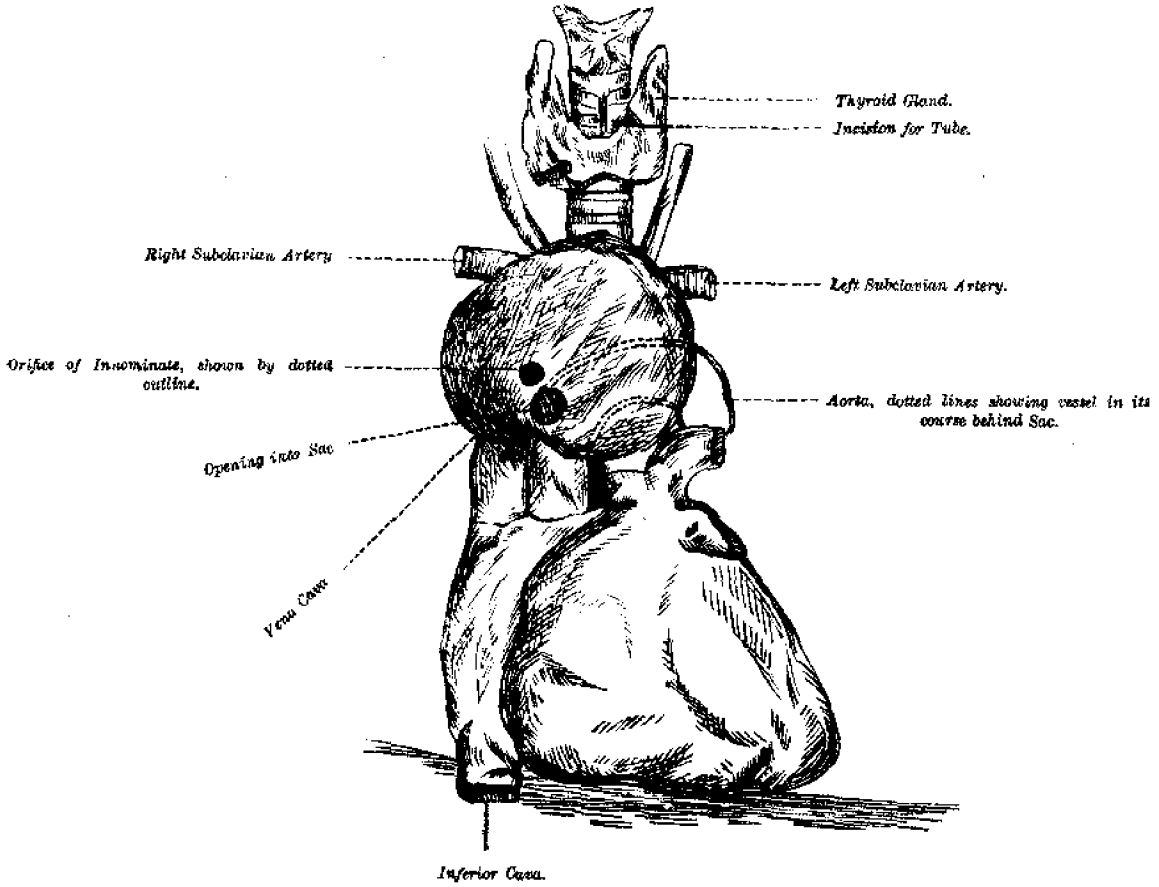
Pulse of right radial perhaps on the whole smaller than that of left, but often both seemed to be very nearly equal. Sphygmographic readings from both radials gave no very definite results. He was ordered to bed, and put on 30 grains iodide potassium three times a day.

He was instructed to avoid, as far as he possibly could, the slightest movement or exertion, while his diet was reduced as far as circumstances would permit. Things went on like this for about six weeks, with decided relief to the prominent symptoms, and certainly less pulsation in the tumour itself. This of course led him to be very sanguine, notwithstanding that the grave aspects his case bore had been fully explained to him. He was almost free from those agonising attacks of suffocation which had previously been so harassing, and of which he was in great dread. Having heard or read somewhere of tracheotomy, and of course being ignorant of the drawbacks which surround the operation in such cases, he never ceased to plead for its performance, at least should laryngeal complications again threaten. Opinions are considerably divided as to whether this operation, under such circumstances, is justifiable or not, and if looked at simply from a remedial point of view, those who deprecate resort to it would seem to have everything on their side, but, as this and various other cases reported in the standard works and medical journals would appear to show, as a powerful ameliorator of horribly painful symptoms, alike distressing to the patient and trying to witness, tracheal incision may be advantageously adopted. Whether getting more confident in his hopes of improvement he had become less careful of movement, or that from other causes the position of the sac had been altered, I cannot say; but one morning, about 2 o'clock, I was called up, and found the patient apparently on the verge of suffocation. Fortunate enough to secure the presence and assistance of my colleague, Dr. ANDERSON of the English Presbyterian Mission, who was passing through Takow at the time, we tried everything we could think of to relieve the urgent symptoms, meeting with varying success. At last an attack came on which seemed to outvie all previous ones in the sufferings inflicted on the unhappy man. Hoping then, at least, to soothe his last moments, I yielded to his continued and piteous appeals for operation, and after some difficulty, by reason of venous congestion, want of daylight and other hindrances, opened the trachea just above the isthmus of the thyroid gland. The ordinary tracheotomy tube readily entered, but was unable to proceed any distance on account of the contraction in the tracheal calibre, consequent on pressure of the sac against the anterior wall. By gentle coaxing, however, I was able to get a bit of gum-elastic tubing, about the largest catheter size, past the obstruction, when the relief was no less immediate than grateful to the patient. He could now lie down, and soon fell off into what appeared an easy and natural sleep. Things progressed thus favourably for five or six hours, when he woke up, took some nourishment, and wishing to use the urinal, was permitted by his attendant to move off the bed for this purpose. Immediately the sac appears to have shifted, closed the tube, and on my arrival a few minutes afterwards I found him in the greatest agony. It was now impossible to detect an opening on any side of the obstruction large enough to allow even this tube to pass, and it was only by dint of great coaxing that after a time I succeeded in getting a bit of No. 8 gum elastic past, with immediate comparative relief to the terrible sufferings he was enduring. Prior occurrences, however, and perhaps under the

circumstances not unfortunately, had produced a state of exhaustion from which it was evident he could not rally; though even the little air this small tube allowed to pass soothed, by graduating, the final struggle in a way which caused us to feel that our operative efforts had not been entirely in vain, and with almost a dying effort the poor fellow signalled his appreciation of what had been done.

Autopsy.—On opening the thorax the heart was found to be much enlarged. Just at the beginning of the arch of the aorta was a large aneurismal sac, from one side of which the innominate artery was given off. It contained a considerable number of fibrinous coagula, arranged in laminæ, the most central of which were evidently of comparatively recent formation, and in fact the tumour appeared to have been making considerable progress towards consolidation. Had this result been attained, however, and the immediately fatal consequences of pressure averted, the presence of another and smaller aneurism on the descending aorta, the sac of which would palpably have given way very soon at one side, sufficiently proved that life could not under any circumstances have been much prolonged. As showing the beneficial effects of rest and iodide of potassium treatment, I think the condition of the large sac was satisfactory, even though the complications prevented a favourable termination. Beyond discovering that the principal vessels were considerably disorganised, the examination was not carried farther.

The accompanying rough sketch shows the position and relations of the aneurism.



The case of phthisis (No. 2), a resident of Anping, was one of very old standing, and, as I have reported on previous occasions, had had symptoms ameliorated and life prolonged by occasional trips to this place. I can only remark that the effect repeatedly produced by a stay at Takow serves the more

conclusively to corroborate the statements I have made in former Reports as to the peculiar influence on tubercular disease the climate of this limited locality always seems to exert. I warned the patient as to the futility of hoping that the disease was other than dormant, and cautioned him against venturing out of the island. With that restlessness, however, and sanguine belief which this class of patients always entertain, feeling somewhat stronger than usual he insisted on making a trip to the Anchorage (Foochow), with a view of trying to obtain, as he said, further benefit from the change. He was carefully cautioned as to the necessity for seeking immediate medical advice should any symptoms lead him to think such necessary, and he promised to return as soon as he possibly could get back, in the event of his hopes not being realised. He had not been long at Pagoda before, though feeling ill, he, while refraining from applying for skilled advice, allowed himself to be cajoled by some person who promised, he said, a permanent and immediate cure not only of the present manifestations but of the disease itself, if the sufferer would purchase and swallow what this "free lance" called his "celebrated elixir of life mixture" and "tissue-renewing pills." The poor fellow, after wasting no little part of his limited savings, and, what was worse, valuable time, besides swallowing a considerable quantity of the vaunted specific, returned to Formosa, broken in spirit, and with disease in active progress.

The last case calling for detailed notice is No. 5, in which the fatal result was undoubtedly brought about by direct and concentrated drain-poisoning.

For some time prior to death the patient had been complaining of obscure symptoms, general languor, loss of flesh, rising unrefreshed in the morning, with occasional attacks of diarrhœa and fever.

The most careful and frequent examinations failed to detect any organic derangement; quinine, for a time, had some effect, but soon relapse would take place. Foul air was suggested and sought for, but from the situation of the house, drains of any sort seemed unnecessary, and those pipes which were placed for carrying off the bath water were repeatedly examined and flushed.

Other occupants of the house suffered in a similar way, but being much more out of doors the effects were neither so continued nor so marked.

The very position of the house, on the summit of a hill, removed from all other habitations, coupled with the apparent absence of any reason for anything in the shape of a sewer, no doubt tended to disarm suspicion, and led us to incline at first to the hope that the influences, whatever they were, must be of general and transitory origin. At last, an attack more severe than anything that had occurred before set in; the adynamic symptoms were marked from the outset, and prostration soon became alarmingly profound. Septicæmia of some sort was evidently present and progressing, notwithstanding everything being done that could be thought of to overcome it. A day or two before the conclusion of the illness a peculiar odour was detected on coming up the hill, and this, after careful tracing to its source, was found to emanate from a split tile which some animal in running across had broken, and here the foulest gas was literally hissing up. Excavations were at once commenced, and a choked drain was discovered leading to the kitchen door, and filled with a mass of the foulest putrefying matter. Both the foreigners, who stood in the open air, superintending the cleansing and laying open of the sewer were seized with severe headache, and one suffered in addition from vomiting and purging. It should be stated that the kitchen and other out-offices formed one side of a quadrangular court surrounded by high walls, and opposite to them was the back of the dwelling-house, with a door which acted as a strong up-take for the air circulating chiefly on the bed-room side of the house. The rush of air through this door was very strong, and thus all the foul emanations from the upper opening of the drain were directly driven up and along the sleeping apartments. This drain was undoubtedly intended originally to convey rain water only from the courtyard, for discharge over the adjacent side of the hill; but situated as it was, in close proximity to the kitchen, of course it formed a most tempting receptacle for culinary and household slops.

When we remember how futile the best systems of trapping closed drains often prove, in spite of the most assiduous care, inventive skill and attentive watching, one can easily imagine what must be the state of a sewer which, constructed only for the most fluid substances, had got choked up with solid matter, bound to undergo decomposition wherever placed. Under the conditions which surround us in China, open house drains, however otherwise objectionable, are alone safe.

Personally I was unaware of, nor did I previously suspect, the existence of this drain. Beautifully situated, carefully and scientifically built, the dwelling above described ought to have been the last place where such a deplorable occurrence could be met with; but, in defiance of all precautions, architectural and domestic, the indolence and carelessness of those over whom the chief sufferer, as it happened, could have no control, inflicted an irreparable injury on innocent individuals, and a calamity on the community at large. No one could be more scrupulously careful in his strict watchfulness for all that might be suspected of producing insanitary influences than my patient's husband; and it was a matter of daily routine with him to see to the flushing of dirty-water pipes from the bath-rooms as well as the speedy removal of all accumulations likely to prove injurious.

The case ran a rapid course, and death ensued on the 10th day of the attack. Here, as on other occasions, I found the subcutaneous injection of ether valuable, and suggestive of more permanent results in a less desperate condition of affairs.

Though not strictly coming under the period reviewed by this Report, still, while fresh in the mind, it may not be out of place to allude to an epidemic of diarrhœa which has just passed over the southern part of this island. It is well known that all through China in the spring of the year diarrhœa is apt to prevail more or less extensively, no doubt due, in great part, to the advent of fruit, which the natives indulge in freely, preferring to eat it when quite green and in its most indigestible condition. This, coupled with insanitary surroundings eminently calculated to intensify the severity of such disorders, would seem sufficient to account for the gravity of each attack; but the excessive mortality which generally accompanies these outbreaks is, I fancy, only to be attributed to the peculiar inability of the Chinaman to withstand any affection localised in his bowels. Everyone must have noticed how rapidly a native collapses under what in a European would scarcely pass for severe colic, and even in ordinary cases, if not speedily checked, results quite out of proportion to the apparent violence of the disease are not unlikely to follow. I have repeatedly seen a Chinaman, purged once or twice, exhibit a condition of shock which could scarcely be worse if he had received a severe abdominal wound; while if the latter had really been the cause, his chances of speedy recovery, with often few or no unfavourable symptoms, would be infinitely better than with a foreigner similarly wounded.

At Taiwan-fu several thousand troops are massed together, with all imaginable disregard of sanitary requirements as to space or general hygienic regulation. The spring diarrhœa set in as usual, and of course the soldiers suffered at once. Its malignancy thus specially nurtured and increased, a type was imparted to the disease which rendered it, for natives, scarcely less fatal than cholera. It quickly spread to the southern districts, and everywhere the death rate rose to an appalling figure. Apparently quite well and able to indulge with wonted freedom in raw, green cucumbers and mangoes, the patient would be suddenly aware that fluid was being largely poured out into his intestines. Very shortly he would be purged; at first the stools would be fæcal, but soon would take on the alvine character; vomiting would now set in, and, with the motions, would recur at intervals varying from a quarter, half, up to a full hour. In

from two to four hours he would be pulseless, when the purging and vomiting generally ceased; but the state of collapse would continue without pain of any sort from 12 to 20 hours, when death would suddenly take place. Just before the end, cramps of fingers and toes and, rarely, some slight contractions of the calf-muscles might be observed, but these at no time were very distressing. From the moment of the first motion, however, the eyes would suddenly appear to sink and the lids remain half open all through. The urine became more scanty, but until the excretion of fluid became more than usually excessive, suppression was by no means a constant symptom. The native remedies seemed to be, from the first, prayer and intercession, with furious tom-toming and explosion of crackers. As soon as the patient was seized, beyond calling in priestly aid, nothing was done to ameliorate matters. For several nights and days both my hospital assistant and myself went about distributing remedies and exhorting the people to be more energetic, but we repeatedly found absolute indifference on the part of the relatives as to the fate of the attacked. On more than one occasion we were informed that some god had been consulted and decreed that the patient must die, and if further efforts were made to thwart his wishes he would demand other lives. Often our aid was declined on these grounds, and frequently we suspected that the friends rather looked on the possibility of the patient's removal as a welcome relief from pecuniary liabilities, especially if it happened to be a female child or an old person.

In the case of one old lady the three daughters-in-law were from the first most strenuous in urging the advisability of letting her alone and not disobeying the urgent dictates of the god whom they frequently consulted, interpreting the replies to the much more afflicted sons, their husbands. Indeed, before filial affection had given way to marital discipline in this case, we were able to get some remedies in, and on more than one occasion she made most hopeful rallies. As it was her life was prolonged for 36 hours, and I am pretty confident, had we been let alone, a different result would have crowned our exertions.

In many other cases we had more scope, and when consulted early enough, say within the first four or six hours, about 80 per cent. recovered. If the patient delayed application for 12 or 14 hours, only about 25 to 30 per cent. were rescued. As may be supposed, the hospital was crowded by those who had no friends to solicit supernatural advice. Numbers of these got better, though several died. Medicines were in constant demand, and placards, from an early stage of the epidemic, had been posted, advising the people to apply for aid, which was cheerfully and gratuitously afforded.

The ordinary patients of the hospital, about 30, had made a regular stampede to their houses as soon as the epidemic became established in this district,—in some instances leaving their effects; and soon the building, save for sufferers from the prevailing disease, was unoccupied. The native assistant worked hard and well, fearlessly visiting with me and also by himself, both by day and night, the hovels where the sick and dying lay. He eventually contracted the disease, and was as near death as anyone could be; but, as proving the benefit likely to follow rational care and treatment, I may mention that although he was a poor subject physically for such an attack, and had it with a virulence I nowhere saw surpassed, he gradually pulled through, and rallied from a condition so desperate that at the time I scarcely thought it possible a satisfactory conclusion could be arrived at.

In this as in other cases the remedies I found most useful at the outset were dilute sulphuric acid and opium, with morphia (subcutaneous) injections. As soon as the purging and vomiting ceased, and shock set in, these were stopped, and repeated hypodermic injections of ether given, with half-hourly enemata of strong beef tea and brandy.

That mortality among the outside natives was chiefly due to want of treatment, not only this typical case but others showed me; and in further proof of this I may state that a *most estimable native, attached in a non-medical capacity to the hospital, who assiduously* aided in nursing the hospital assistant, was himself seized, and went through an equally bad attack. Being a stronger man, he rallied somewhat sooner, as after 24 hours I was able to leave him for the first time. Here I had the valuable assistance of my friend Dr. SMITH, R.N., of H.B.M.S. *Merlin*, who was much interested in watching this and similar cases. He recognised the type of disease as being not unlike that he saw on the coast of Africa.

Two or three foreigners were attacked with undoubtedly the same complaint, and although they vomited and purged freely, at no time, notwithstanding that one was rather a weakly subject, were any symptoms developed calculated to inspire uneasiness either on the part of the patient or myself. The attack passed off in an hour or two, and the sufferers seemed no worse for what had happened.

That among the natives such disease should not only increase in malignancy but be widely propagated, anyone who went into their hovels could readily understand. Bamboo and lath erections, with bare-ground floors, on which most of the patients were sleeping, were rendered pestilent by the excretions from both stomach and bowels being freely discharged on them and left to soak in. Not only the patients but the numerous other inmates used the corners of the huts as urinals. I am able to give no exact idea of the mortality rate, but, *as far as can be discovered, it would seem to have attained at least 20 or 22 per mille* of total population in most of the districts affected. The duration of the epidemic was from three weeks to a month; and although I have no hesitation in saying that it was not cholera, properly so called, nor anything like it, if I may be guided by my experience of that disease during two great epidemics, still, for want of a better name, it might be styled "cholerine," in so far as the objective manifestations went, while the great mortality among natives, so unusual in that disease when attacking European adults, must be ascribed to race susceptibility. As I *have shown, when present in foreigners the attack was scarcely worthy of even this appellation;* but among the Chinese it undoubtedly assumed proportions which will, I imagine, cause the summer of 1884 to be long remembered in South Formosa. As usual, the rich and well housed scarcely suffered at all.

DAVID MANSON MEMORIAL HOSPITAL.

This institution has continued to progress favourably, so much so as often to prove inadequate to the demands that are made on its space. On one or two occasions it has been necessary to make up beds in every available place, inclusive of the unoccupied foreign wards, and even then applicants from a distance have tented over catamarans or sampans drawn up on the adjacent beach, and lived there until vacancies occurred in the building.

Constructed to accommodate only 24, or at most 30, native beds, it is not difficult to keep up the maximum number nominally provided for; but when, as happens at least once and sometimes twice a year, a large influx of aborigines from the east coast arrives, together with patients from distant localities, it has been thought advisable to make every effort, especially in the case of the savages, to respond to the demand. Unfortunately, however, the sources from which support is derived are not as numerous as such continued efforts require, and it became necessary for a general meeting to direct that the measures for relief should be more strictly confined to the actual accommodation of the hospital. There are times, such as when agricultural exigencies detain people at home and thus prevent their bringing their sick, or, in the case of the latter, prompt longer abstinence from seeking medical aid, that beds are vacant even among those ordinarily provided; but such occasions have now become sufficiently rare to warrant my stating that if the funds could be increased, the demand for hospital accommodation in these districts would probably be found equal to the financial supply. On Mr. Consul WARREN kindly representing these facts to the Taotai last year, this official, with wonted generosity, was good enough to present $100 extra, as a nucleus for a building fund. I need scarcely say how sincerely it is hoped that the example set will be speedily followed.

Most prominent among the diseases for which relief is sought are those of the eye, next come malarial ailments in their different phases, then skin diseases, and lastly surgical complaints. Syphilis seems very common, and the aborigines prove no exception to the rule. With reference to therapeutics, I desire to draw attention to the beneficial effects, in the tertiary form of enthetic disease, obtained from the internal use of iodoform, as also its marked effect in those skin diseases where tubercles are the prominent manifestations. In amenorrhœa I have found the permanganate of potash pills, as recommended by Dr. RINGER of London, very efficacious. In enlarged spleen, a very common sequela of malarial fever, the bromide of potassium, internally, with the red oxide of mercury ointment applied over the affected gland, has seldom failed to produce marked amelioration, and very often complete reduction in size. For the intermittents, tincture of iodine, quinium and arsenic prove valuable and economical adjuvants to quinine. In treating surgical cases, with a people so obstinately careless and even disobedient, I find a judicious application of iodoform powder to the wound, with a thick dressing of oakum, sprinkled throughout with the iodoform, at once the most certain and efficacious antiseptic dressing, under which healing by first intention is not at all infrequent.

Having in previous Reports alluded to the readiness of the people in this island to accept Western modes of treatment, and also to the unsatisfactory response which, in as far as native practitioners were concerned, had hitherto been made, it will be easily understood that I feel anxious, when calling attention to the want, to make some effort for its supply.

As I have stated before, it has always been the wish of the founders and supporters of the Native Hospital to instruct proper persons in the science and practice of medicine. Unfortunately, the literature available through the medium of Chinese is not as extensive as one could wish, although the labours in this direction of Drs. KERR and OSGOOD have done as much as it is possible for two individuals to effect in fulfilment of the desideratum. Still, under present circumstances, it struck me that were it possible to obtain pupils conversant

with some foreign language (and in my case I naturally selected English), a greater field would be opened to the student, and the facilities for imparting instruction proportionately increased. As far as I can discover, except in comparatively rare cases, and after the expenditure of much time and money, the plan of sending lads to Western medical schools has not seemed to have resulted as satisfactorily as undoubted superiority of advantages thus afforded appears at first sight to promise. This I account for by the fact that if a lad has to go to a Western country and there learn English or any other language, considering the general absence of special means for teaching those to whom the form and construction of such language is so directly opposite to that of their mother tongue, as is necessarily the case with natives of China, a considerable period must elapse, with its concomitant expense, before the pupil is in a position to commence his special study; and supposing the boy to have been taught English out here, even after that perfect method which has been attained at Hongkong, the sudden necessity for following lectures, delivered in technical language, would prevent the Chinese student for a very long time from acquiring sufficient familiarity with the expressions employed to make rapid material progress in mastering the subjects. This argument would only apply to the ordinary system of teaching in medical schools by professors, who assume that the language they use is perfectly understood by their hearers, and, of course, were special classes for Chinese candidates formed at any school where the teacher could be brought into immediate and individual contact with the members, explaining and simplifying phraseology, then this difficulty would be removed. But to institute such a system would mean the construction of special schools in foreign countries, presided over by persons whose duties would be restricted to the objects and contingencies of the establishment. Considering the difficulty and expense of starting such institutions abroad, it seems—at any rate at the outset, and particularly in a land where every novel project must be gradually introduced—that something approaching the desired method might certainly, if started by private exertion, be at once set up in China itself. The great difficulty, which naturally suggests itself, is the utter impossibility of getting bodies for anatomical purposes. If no alternative offered, I am free to admit, so reluctant should I be to accept anything which showed a risk of not approaching practical completeness, that I should have been inclined to give up my project (or at any rate its accomplishment by the plan I will presently describe) as being incapable of realisation. Remembering as I do, however, that, setting aside the undoubted advantage of becoming familiar with the appearance and touch of the different tissues, the best men at home often resort to those splendid models and mechanical preparations which can now be obtained, together with the fine plates available, to acquire that minute and detailed knowledge of anatomy which proper medical boards demand, I have been led to hope that if possessed of such means as those alluded to, together with the advantage of occasionally seeing a postmortem—opportunities for which must occur at every place,—medical students could be sufficiently grounded in the all-essential subjects of anatomy and physiology, notwithstanding that native prejudice which would deprive them of the means for becoming so were they solely dependent on actual dissection. For surgery and medicine abundant opportunities are afforded in the hospital. In the early days of my experiment I tried to get native youths and teach them English, but those who offered came from a class of persons whose ambition

seemed to be merely to acquire the reputed contact with foreigners, which is all that is often considered an essential by the quacks who profess to practise foreign medicine; or who, as soon as the difficulties of learning the language became more apparent, left off study, in the hope of realising, sufficiently for their narrow and speculative aspirations, the little English they had acquired. It soon became evident that unless candidates could be drawn from a class whose social antecedents and sincere desire to learn would fit them to engage in scientific study, the prospect of carrying out my intentions was not encouraging. I happened to mention the matter to one of the high officials in Hongkong, asking whether he could assist me in getting students from among the scholars brought up in the excellent institution organised by the Colonial Government. With the utmost kindness this gentleman took much trouble, and exciting the kindly interest of some of his colleagues directly associated with native educational projects, my offer was made known to the pupils of the Central School, when two of their best and most advanced pupils volunteered to come to Takow for at least two years (this hospital finding them board and lodging), faithfully promising to subject themselves to the necessary discipline, and exert all possible assiduity in the attempt to acquire the subjects in which they would be instructed. On laying the matter before a general meeting, I was authorised to invite the lads to come, and they accordingly arrived in the latter part of November 1883. As far as English and the elements of an ordinary general education are concerned, these boys certainly reflect credit on the care which has been expended on their tuition, but even with this great advantage, daily experience prompts me the more to repeat what I have previously said as to the necessity of the closest personal attention being given to each individual when seeking to teach something which is so entirely new, and foreign to what they have been accustomed to; and I feel sure that if merely admitted to ordinary lectures by the most able men, as would be the only course open to them in European medical schools, a considerable time would elapse before, by careful, unassisted plodding, they acquired sufficient familiarity with new phases of language and thought to enable them to derive benefit from what otherwise would be, by reason of the standing and ability of the instructors, no doubt infinitely superior advantages. There seems, however, to be nothing against sufficiently practical opportunities being afforded in China, if the comparatively feeble and initiatory efforts I now venture to submit are thought worthy of expansion by those much abler to advance towards the standard attained in foreign countries. Some such plan may be the thin end of a wedge, which, if driven home, may serve in its proper sphere to assist in dispelling that mental and physical exclusiveness which has hitherto acted as a barrier between Chinese and Western intercourse. There can be no doubt that if persons were thus educated in matters the practical benefit of which is immediately palpable, a powerful class of intermediaries would be established, whose influence in bringing their countrymen to closer acquaintanceship with the advantages which foreigners and foreign ways are able to confer would possibly be very effective. They would prove powerful levers in bringing about that intimate relation with the natives which has so long been desired by those who aim at securing the mutual benefits of unrestricted intercourse.

Briefly, then, the plan I submit, and which I am now attempting to carry out, is as follows. That these or other young men, similarly proficient in English, shall study for a period of not less than one year the following subjects, viz., anatomy, physiology, elementary

chemistry, and systematic surgery; confining themselves entirely to these subjects, and in no way attempting to study their applications to practice.

At the end of that period, or at such time as they shall feel, or may be thought, competent to undergo a searching written and oral examination on all these subjects, they may present themselves at Hongkong or Shanghai, and there be examined by a medical board drawn from as many nationalities as possible. When those who can be got to undertake this kindly duty are thoroughly satisfied as to the proficiency of the candidates, they would be asked to testify the same, under their signatures, with such remarks as they may think proper to make. The pupils would then return to the hospital for at least one year, or such time as they may require, and engage in the study of practice of medicine, midwifery, clinical medicine and surgery, with materia medica and pharmacy. At the end of this period of study they should again present themselves before another board, composed in as cosmopolitan a manner as may be possible, who will also on being satisfied certify the same in similar manner to their predecessors. Should this scheme assume proportions beyond those comprehended in the first experiment, such examiners would no doubt have to receive adequate return for the exertion and trouble they are put to; but I hope in the first instance to so far secure the sympathy of my medical brethren in the objects I submit at this time, that no difficulty will arise in forming boards at either place, and my confidence in this hope has been most encouragingly strengthened by the kind and generous response that even my tentative, and hitherto very limited, inquiries have elicited as to the probable critical support I may look for in carrying out this all-important portion of the scheme on the first trial occasion of sending men up.

The certificates which it is proposed to issue will be drawn up in English, Latin and Chinese. Each will have attached to it a photograph (bearing the hospital stamp) of the person to whom it is granted, whose signature and thumb mark will still further secure the public against fraud. A list of the certificate-holders up to date will be appended to every certificate, and all particulars necessary to ensure the identification of each individual will be inserted under appropriate headings. The certificates will bear the signatures of the hospital committee and of the surgeon to the hospital, besides those of the examiners. The latter will be requested to note the degree of proficiency reached by each candidate in each subject, besides certifying as to his general fitness to practice medicine and surgery.

Men thus armed will certainly be far ahead of any who have up to this date studied medicine in China. The standard attained will depend greatly on the views held by the examiners, and the means they take for enforcing them.

With men of such eminence as, fortunately, one is able to hope may be induced to lend their aid in deciding what shall be requisite as a test of practical efficiency, I am free to admit that if their approval is once obtained, that fact alone will stamp this certificate with a value that it will be hard to detract from.

To keep up a regular supply of men qualified in the way I have suggested is a much greater undertaking than any set of private individuals, however energetic and benevolent their inclinations, could hope to carry on to adequate extent. Considering the vast usefulness of such a body of practitioners, even if only limited to the army and navy of this country,

together with the undoubted fact that those with whom would rest the responsibility of making such arrangements are reported not only favourable but anxious to engraft some such system on the services in which they are particularly interested, I confess to feeling somewhat sanguine that the scheme, which private exertion is now only able to construct in embryo, may by the potential wants and assistance I have hinted at expand into something more worthy of taking its share in a scheme which ought to confer national benefit.

If by any means the value of the certificate could obtain some official recognition, so as to enable it to confer even slight social distinction, especially among the literary classes, then I fancy there would be but little need for offering further inducement to candidates to come forward other than that comprehended by the possession of the testimonial itself, with its concomitant honours and substantial attributes.

Although in China education, in the foreign acceptation of the word, has been almost thrown before the people, with a vast expenditure of talent and money, for several decades of years, we unhappily know how little recognition it has met with, one might say, at the hand of any, but certainly from those whose social standing would make their adherence worthy of notice. With reference to the literati, I need say but little as to the importance of avoiding all that might tend to stir up their hostility and prejudice, and in this connexion I take it as a somewhat auspicious sign that one of my first pupils should be the son of a well-to-do native graduate, and the other the nephew of one who, himself a literatus, has been long intimately connected with foreigners, and therefore well able to explain to his relative the value of the career he was entering on. I allude to Mr. LIANG SU, a member of the Customs native staff at Canton.

I need scarcely say that nothing but the purest chance and their own desire brought about the selection of these young men, who until the moment of their arrival were perfectly unknown to anyone connected with the hospital or its school. I must now proceed to describe in more detail the method of teaching proposed and, in lieu of better, at present adopted by me. With a pertinacity and assiduity which Chinese, above all other nations, can devote to study, when so inclined, my pupils have thrown themselves into their work with the greatest zeal and energy. Coming to my house from 7 in the morning until the same hour at night, with but one hour's interval for dinner, a good deal of ground is thoroughly explored. Out of this time I devote an hour to each of the four subjects, explaining and instructing more in conversational manner than in what is generally understood by a lecture.

The material at my command is fortunately sufficiently ample for present purposes. In my Report for the period ending March 1882* I alluded to the efforts of some kind friends in Scotland, who were endeavouring to obtain the necessary funds for purchasing one of the celebrated French anatomical models of the human frame, in common use at all the schools at home. Thanks to the untiring exertions of Miss SCOTT, of Hawkhill, Ayrshire, who enlisted not only the sympathy but substantial support of many distinguished and benevolent persons, and also with the help afforded by Mr. JOHN SWIRE, one of the subscribers, who kindly saw to its passage from France to China, I am now able to announce that this hospital possesses one of

* Customs *Medical Reports*, xxiii, 24.

the most perfect anatomical models that it is possible to obtain, and amply sufficient for teaching both general and regional anatomy.

We also have access to a complete disarticulated skeleton, fullest and latest books on all the subjects, together with the necessary supply of plates of various descriptions. I do not mean, however, to assert that we are by any means in complete possession of all that would be necessary were the school to attain dimensions beyond those at present existent, still less should I wish it assumed that there is not ample scope for much benevolent activity both in a general and pecuniary sense, if the institution is to enter on the proportions and sphere of usefulness we all hope is in store for it.

At the end of each quarter I have held regular written examinations on the subjects gone over in these periods respectively. During the time they were writing their papers the scholars had no help from any extraneous source whatever, being the whole time under the closest personal observation; and beyond knowing the portion of each subject which would form the topic for examination, they were utterly unable, until the moment of seeing the questions (which I may mention were drawn up but a short time before they were presented to the pupils), to form an idea of what these questions were, or on what part of what they had learned each and any of the interrogatories would bear. In a word, I have no hesitation in saying that their answers, whatever their worth, accurately show the information they can be assumed to display; and in proof of this I confidently refer to the coming test before a disinterested board in verification of that which at present I can only affirm. The original papers I have sent down to those interested in the boys' welfare in Hongkong; but with reference to the first quarterly examination, I may state I previously estimated the replies at what appeared to me a just and moderate valuation, viz., 75 to 80 per cent. of the whole. To give a fuller idea of the extent to which the boys' studies have gone, I would refer to the following copies of the various papers set :—

PAPERS on ANATOMY and ELEMENTARY CHEMISTRY set at First Quarterly Examination (1st Year), DAVID MANSON MEMORIAL HOSPITAL MEDICAL SCHOOL.

ELEMENTARY CHEMISTRY. (1st Examination.)

Three hours allowed for this paper, and eight questions only must be attempted.

1. What forces are used by the chemist to overcome cohesion?
2. What is the nature of a solid, a liquid and a gas?
3. What is—
   (*a.*) Absolute weight?
   (*b.*) Specific gravity?
4. What is chemical affinity, and does it act between similar or unlike particles?
5. What is the theory of chemical combination? and name the three types.
6. What is meant by the term "equivalent"? and give an example of a mono-, di-, tri- and tetra-equivalent element.
7. When acids unite with bases, what do they form; and how are the compounds named? Illustrate your answer by assuming A=acid and B=base, giving the possible compounds of A and B in full.
8. How is oxygen prepared? Describe its general properties, and state its relation to combustion.
9. What is heat; and how is light formed?
10. Write in words the following :—
    K_2SO_4 $KHCO_3$ H_2CrO_4 $FePO_4$ $Cu(AsO_4)_2$.

27th February 1884.

ANATOMY (OSTEOLOGY). (1st Examination.)

Four hours allowed for this paper, and no more than six questions must be attempted.

1. Describe the sphenoid bone,—
   (*a.*) Its shape and situation,
   (*b.*) Its articulations,
   (*c.*) Its processes;
   also give all the foramina, and state what they transmit.
2. Where is the anterior condyloid canal, and what passes through it?
3. Describe the first cervical, twelfth dorsal and fifth lumbar vertebræ, giving the special distinctions from their fellows.
4. Name the bones of the carpus, and state how any three you select may be distinguished right and left.
5. What muscles arise from the outside of the ileum?
6. State the centres of ossification in the femur and the periods at which the different parts unite to the shaft.
7. How is the os calcis of the right foot known from its fellow, and with what does it articulate?
8. How many ribs are there; and what are those having special differences from their fellows? giving these in full.

28*th February* 1884.

PAPERS ON ANATOMY, PHYSIOLOGY, SURGERY and CHEMISTRY set at Second Quarterly Examination (1st Year), DAVID MANSON MEMORIAL HOSPITAL MEDICAL SCHOOL.

ANATOMY (HEAD AND NECK). (2nd Examination.)

Ten hours allowed for this paper, and all questions may be attempted.

1. Describe the third ventricle of the brain.
2. Describe the medulla oblongata,—
   (*a.*) Structure,
   (*b.*) General form,
   (*c.*) Relations,
   (*d.*) Connexions with cerebrum, pons, cerebellum and spinal cord.
3. Describe the course of the vena cava; give its relations and the veins opening directly into it.
4. Give the course and relations of the pneumogastric and phrenic nerves on both sides in neck and thorax, with branches and their distribution.
5. Describe the digastric triangle,—
   (*a.*) Boundaries,
   (*b.*) Contents;
   stating the parts to be removed for its exposure.
6. Give the course and relations of the subclavian arteries on both sides.
7. Describe the cervical fascia, and state how it would influence matter forming in lower part of neck.
8. Describe the sympathetic system in the neck, giving its branches and their distribution.
9. Name the nerves of the larynx; describe their origin, course and distribution.
10. Describe a lobule of the lung.

31*st May* 1884.

PHYSIOLOGY. (1st Examination.)

Eight hours allowed for this paper, and all questions may be attempted.

1. What are the ultimate constituents of the body; and what proportion does water bear to body weight?
2. What are the organic compounds of the body divided into? and give examples of each.
3. What quantity of blood is estimated to be in man's body? and describe the *formed* elements of blood, giving the numerical proportion each bears to the other.
4. Describe the process of coagulation in blood; what circumstances favour it, and on what does it depend?
5. Do serous fluids *spontaneously* coagulate, and how can they be made to do so?
6. What are the two gases in blood? and give their relative proportion.

7. What are the two sounds of the heart supposed to be due to; and about what force have the ventricles been estimated to put forth in 24 hours?
8. Describe the nervous mechanism of the heart,—
   (*a.*) Intrinsic;
   (*b.*) Extrinsic, with
      (1.) Inhibitory,
      (2.) Depressor.
9. What is the result of division of—
   (*a.*) One vagus,
   (*b.*) Both vagi;
   and how may the inhibitory centre be excited directly and indirectly?
10. State the agents aiding the movements of the blood.

1st June 1884.

ELEMENTARY CHEMISTRY. (2nd Examination.)

Five hours allowed for this paper, and all questions may be attempted.

1. *How does temperature affect the expansion or* contraction of water? also state the comparative space occupied by—
   (*a.*) Water,
   (*b.*) Steam;
   briefly describing how the purest water may be *obtained.*
2. What was formerly supposed to be an essential constituent of acids? and state what all acids are at present considered to be.
3. State the properties of nitrogen; mention how and where found in nature, giving one process for its artificial production; also state how nitric acid is got, its properties, uses and symbol, and give the compounds of nitrogen with oxygen in symbols.
4. State the law of gaseous diffusion and the benefits resulting from it; also give the general laws relative to the densities of gases, with the symbol expressive of the combining volume of a gas.
5. Describe flame,—
   (*a.*) The different parts,
   (*b.*) Processes in each part;
   (*c.*) Describe a safety lamp and the principle on which it depends;
   (*d.*) Give the compounds of carbon used for illuminating purposes.
6. Describe the following, their uses, how found, made, properties and symbols:—
   (1.) Sulphuretted hydrogen;
   (2.) Sulphuric acid;
   (3.) *Amorphous phosphorus*;
   (4.) Phosphoric acid;
   (5.) Chlorine;
   (6.) *Hydrochloric acid*;
   (7.) Teriodide of azote; and
   (8.) Fluorine.

4th June 1884.

SYSTEMATIC SURGERY. (1st Examination.)

Five hours allowed for this paper, and all questions may be attempted.

1. Describe inflammation generally and briefly, with special reference to—
   (*a.*) Effusion,
   (*b.*) Adhesive or plastic,
   (*c.*) Suppuration,
   (*d.*) Mortification;
   tracing each of these processes in a wound.
2. Define the following:—
   (1.) Healing by first intention;
   (2.) Healing by second intention;
   (3.) Granulation;
   (4.) Hypertrophy;
   (5.) Atrophy.
3. *Describe tumours generally*; how divided, with the characteristic symptoms and differences of each variety.
4. *Describe sarcomata generally*; and give the appearances, symptoms and usual sites of scirrhus and epithelioma.
5. Describe the methods generally used for arresting hæmorrhage, and the process by which an artery becomes occluded after ligature.
6. Describe generally,—
   (*a.*) Gunshot wounds;
   (*b.*) Suspended animation and the means for restoring same;
   (*c.*) Bruise or contusion.

4th June 1884.

Press copies of the papers sent in at the second quarterly examination were forwarded to Dr. JAMIESON, as editor of these Reports, without comment, asking him for an unreserved opinion as to the value to be attached to them, and to publish the same in a note to this Report.*

NOTES ON THE ABORIGINES OF SOUTH FORMOSA.

I have already referred to the annual visits we receive from the aborigines or so-called savages. Having on one occasion the advantage of a particularly good interpreter, in concert with Ritter VON FRIES of this office and Herr PAOLI of Bremen, I occupied several afternoons in seeking to obtain information from these people as to their manners and customs, and in the end succeeded in getting a considerable number of details. From these I drew up a paper, which I forwarded to Mr. GEO. TAYLOR, Chief Lightkeeper at South Cape, and asked if he would kindly check it over, making any additions or corrections his superior advantages of constant intercourse with them and acquaintance with their language eminently fitted him to afford. This gentleman, I may remark, besides a considerable knowledge of Chinese, has not only taught himself, during his stay at that station, the language of the surrounding tribe, but is looked on by these people with such friendly feelings, and is in such constant intercourse with them, that no better authority in South Formosa could be referred to on such a subject. He has most kindly exceeded my expectations, and forwarded me the following highly interesting account, in which he has embodied, subject to his investigations, my paper on the Amois, and, going further than the limits I suggested, he has added a most valuable memorandum on the Paiwan tribe, which I hope he may be induced hereafter to expand. The following, then, is the conjoint paper to which I allude:—

The Ameir, Amia, Amois or Amis tribe of "savages" are scattered in small villages along the east coast of Formosa, from Pilam to South Cape.

Traditions among other aborigines describe the above as having descended from a shipwrecked crew who were allowed by the ruling chiefs to live and intermarry with the aboriginals on the understanding that they and their posterity would be slaves for ever to the chief tribe, and this they are to great extent at the present day.

They are now numerically the strongest tribe in the south of Formosa, and of course follow their own inclinations as to what work they do for their *ci-devant* masters, still, however, recognising that to the ruling family they owe a certain amount of respect and loyalty.

They are a meek, quiet, inoffensive people, living principally by agriculture and fishing. They seldom go hunting, and do not appear to have much desire for field sports or pastimes.

* That report was as follows:—

The answers sent me are on the whole astonishingly good; almost too good, as they suggest the repetition of something learned by rote. But as the plan of teaching adopted must prevent any mere mechanical acquisition of facts unaccompanied by intellectual acquisition of the corresponding ideas, these papers show a very remarkable amount of knowledge. Many answers are of course incomplete, but there are few absolute mis-statements. The fairest principle to adopt in judging them is that of comparison with what should be expected from English first and second year students respectively. Whatever may now be the case, the average medical student of my time (1856–61) would not have done so well at a written examination in either anatomy, physiology or chemistry at the end of his second year as the Takow students have done. But the assiduous care devoted to these latter individually has to be considered, not with a view to lessening the credit due to them but as diminishing the discredit that should attach to English youths whose papers might compare unfavourably with those before me.

Their recognised head-quarters, or those of the supreme family, are near Pilam; but with most villages distant from that place this connexion is more traditional than real. These settlements having little or no communication with Pilam, all disputes are adjusted by the chiefs of the nearest aboriginal tribe, to whom they pay tribute.

There is little doubt as to their being a distinct race, differing in most respects from other "savages," while, from examination of their language, habits, etc., the tradition as to their descent from a shipwrecked crew appears reasonable. As a rule hirsute, with pronounced nose, square chin, prominent eyebrows and tall muscular build, they offer a strong contrast to the slender, rather effeminate physique which prevails among their immediate neighbours.

From some Amois who have visited the David Manson Memorial Hospital at Takow, much interesting information has been gained. These people said that they came from Pilam, and their statements would seem to show that the traditions extending more or less over all their branches are similar to those preserved in the first Formosan home of the tribe. It thus appears that they have an idea of a "first man and woman," holding that in the beginning an unknown being planted his staff or walking stick, which eventually became a bamboo; from this sprang a man and a woman, the impressions of whose feet are still seen on a large stone at a place called Arapanai. In this locality the couple first settled down, and their offspring are the people at present inhabiting Cowabsan. On this stone can also be seen the original foot-prints of all animals known to them, but how they came into existence deponents could not say. The Pilam men also believe in one supreme deity, named Marahtoo, duly worshipping him. He is supposed to live "above and beyond the earth," and his assistance is implored on all occasions of want or necessity. The ceremony of adoration or intercession is performed by priestesses or witches, and consists of prayers, accompanied by throwing handfuls of small glass beads in the air, together with small pieces of pork. Among those inhabiting the villages near South Cape, however, the belief in a special supreme deity is unknown, though spirit-worship prevails, with belief in witchcraft and prophetic powers as displayed by certain individuals. Beads and small slips of bamboo blackened on one side constitute the ritual implements used when interviewing the spirits, and the priestesses or witches profess to interpret by the odd or even number of beads, or by the position of the bamboo slips as they fall, what the spirits wish to make known. In all other respects the information given by those at the hospital corresponds with that which has been obtained at South Cape, where people of this tribe have daily intercourse with Chinese or Europeans. Thus ghosts or spirits of the dead are generally believed in, and these, too, are reputed visible to the priestesses; indeed, if appearing to others than those legitimately authorised to interview or observe them, it is wise immediately to obtain the intercession of the priestesses on behalf of the unlucky beholder, else he will surely die. Spirits are said to dwell in caves, cliffs and high places, and are the cause of echoes; therefore, resonant localities are held sacred, being reserved for superstitious ceremonies and incantations. These are gone through when the tribe is going on the war-path, when sickness prevails, or on other important occasions. Only the elders of a village can approach the priestess when the ceremony is being performed. She contorts herself, gradually getting worked up into a kind of ecstasy, and eventually swoons or pretends to do so. In this last condition she is left, and next day she returns to the village, making known the will of the spirits.

The Amis witches have a reputation for superiority in knowledge and power among all the savages, not excepting neighbouring and different tribes, who frequently consult them.

The Amis believe in an after state where good and bad actions performed in this life meet with corresponding rewards and punishments. They have no special code of moral law. That of use and custom is what may be said to prevail, *i.e.*, as in most other cases, the evident requirements of natural law guide the actions of the men, who are supposed to note what benefits each other or the community generally, and act accordingly. They believe in a future heaven, and to some extent in a hell, but certainly in purgatory. Everyone of course hopes he will go to heaven after death, and hell seems to be reserved as the possible location for one's neighbours. They say, however, that the future state

generally must be better than this world, as nobody ever comes back to complain. They place heaven in the far north, and hell equally far south. Purgatory is in the air, and its inhabitants are ghosts (evil spirits). As to the special delights of heaven, or what the punishments invented and inflicted in hell, they profess complete ignorance, but hold that the latter at least cannot be very severe, "otherwise spirits would not remain." The general idea appears to be that each soul follows its tastes and inclinations; thus bad associate with bad, and good with good.

No missionaries have ever been among them; hence religion as understood or defined by us is beyond the present range of their conception. Fond of music, on all ceremonial occasions singing and chanting occupies a prominent part. Set in a minor key, and not unpleasing to the ear, their music is very weird and, after a time, monotonous. The only musical instrument they possess is a kind of flageolet, though this is but rarely used. Their vocal notes are from the chest, and very fine voices are to be met with. They sing in parts and with considerable judgment and taste. Extremely fond of European music and musical instruments, they will sit for hours listening to a violin, testifying their appreciation by explosive bursts of laughter, accompanying the air all through by movements of hands and feet. They prefer not to sing on ordinary occasions, believing that music is intended to delight the spirits, and if used unnecessarily or irreverently, so doing may offend the powers of the air. They prove complaisant, however, and will oblige inquiring foreigners, and even if once started they must be allowed to finish in their own time, a contingency sometimes troublesome if not wearisome.

They are not fond of war, but if compelled to fight are reputed to be very courageous. Difficulties arise, as a rule, from disputes with other tribes as to boundaries of fields, hunting grounds, possession of fishing nets and fishing grounds. Before entering on the war-path the priestesses are called on to prophesy the result. Prisoners are never taken, nor do the members of this tribe cut off heads. Where a man falls he is allowed to remain, and if time permits they even bury their enemies.

They live to a good old age, and very old men are often seen among them. Years are reckoned by harvests, and using this as a basis for calculation, it would seem that many attain the age of 70, 80 or even 90 years, and in some rather rare cases the century of life has been accomplished. Many infants succumb to the hardening process described further on, which all babes must undergo. Old people are well cared for, and greatly respected by their families. The dead are clothed in ordinary garments, the rich sewing them up in buffalo skin. They are then buried, facing west, with all ornaments worn during life; but in late years this custom appears to be less strictly observed.

Graves are dug in forests and waste lands, and marked by wooden monuments. In a few years the site is forgotten, and no attempt at grave preservation appears to be made. When coming from the funeral, just as he is leaving the grave each man takes a handful of earth and flinging it at the upright piece of wood, spits towards it, requesting the departed spirit to keep quiet and submit to whatever may be its condition, seeing that when embodied it had been well treated by the family in the declining years of incarnation, notwithstanding the fact of this attention having caused much trouble. He is particularly requested not to think of returning, and warned that should he do so he will be stoned, spit on, and every effort made to drive him away. After this the relatives give a feast, when the priestesses interview the deceased, whom they always describe as being happy and contented in the other world. Such customs would seem to explain the slight importance placed on the establishment of a hell, or where admitted, only as a place for the wicked, who still, however, find it a congenial resort, being peopled by spirits of like depraved tastes.

There is not much courtship or nuptial ceremony. Young men and women fall in love with each other, of course, and if old enough, equally of course, there is a gathering of friends, with its necessary feast. The couple then proclaim that they intend living together, and there is an end of the matter.

They have only one wife at a time, but with the young divorces are frequent, generally consequent on infidelity on either side, or they may be got for any slight dispute, or incompatibility of temper. Some vicious young men have been known to get their wives divorced every two years, but wives also desert their husbands on the slightest provocation. These affairs cause no comment or scandal in the

tribe, as in effect, with few exceptions, the marriage state can scarcely be called a permanent institution until the males are about 40 years old, when they seem to acquire discretion and a fixed wife simultaneously. After that age, divorces are unknown. The offspring of divorced wives or husbands consult their own inclinations as to which parent shall retain custody of them, though in deciding this point the grandparents have an influential voice. No stigma is attached to these children, and in so far as they can they strive and are permitted to attach themselves to whichever is the more comfortable home. Chastity does not seem to call forth unlimited praise, nor does the lack of it elicit censure; therefore, both sexes are apt to be more guided by the impulses of desire than by reference to any moral code, and it cannot be said that either party seeks secrecy, nor does public opinion necessitate such. There are no prostitutes, properly so-called, although unproclaimed women accept love gifts of betel-nut, tobacco, fish, etc., and the offspring of such intrigues are taken care of and treated in the same way as if their parents had formally declared themselves man and wife.

Close consanguinity is a bar to marriage or intimacy. As far as marital infidelity is concerned, it cannot be said *per se* to entail either shame or other consequences, but if pregnancy follows, then the injured party, man or woman, is apt to make it more convenient for the co-respondent to obtain divorce. Rape or indecent assault is severely punished, and anyone committing this offence may be killed by any relative of the violated woman. Infanticide of the healthy is unknown, but blind children or monstrosities are killed at birth. Fertility in women is about the same as among the Chinese; and filial obedience, with devoted attention to their parents during life, is strictly enforced.

Should a man from one village or tribe fall in love with and wish to marry into another community or tribe, a go-between is engaged, who makes known the man's wishes and prepares the way. If this medium reports things favourable, the man brings a parcel of cakes, betel-nuts, pork, etc., with enough cloth to make a suit of clothes, and lays them in front of the maiden's house. If the maid comes out and removes these presents, the lover may look on his suit as successful; but if no notice is taken of the man or his presents, he may go away, and cannot in future renew his attentions to the unwilling damsel.

In cases of divorce where both the husband and wife were possessed of considerable property before marriage, an equitable division is made by the chief both as to property and children, and his decision is supreme and final.

In parturition the women sit down, and those confined with a first child or in difficult cases have the assistance of other women. In subsequent labours they generally do all that is necessary themselves. Cases of severe labours or dying in childbirth are rare. The umbilical cord is severed with a sharp bamboo and tied. The child is named by its mother, and in the case of the first-born, after its grandfather or grandmother, as the case may be. Succeeding children are styled as fancy directs. The child is suckled till another takes its place, or until past two years. When born the child is immediately thrown into a tub of cold water, then taken out and wiped dry. This is continued daily for about a fortnight; afterwards it is taken every morning to the nearest river or sea-beach by its father, thrown into the water, and allowed to struggle for some time. This treatment is pursued both in summer and winter, until the child is old enough to walk into the water itself. They say that children can swim a long time before they can walk; thus the Amis are such expert swimmers and divers.

A woman does no work nor can she return to cohabitation until two months after childbirth. She can get up and walk about as soon as she thinks she is fit to do so.

At Pilam syphilis is called *ba-long-gong*, and is supposed to be communicated in the first instance by an evil spirit or incubus. At South Cape syphilis is rare, has no name, and no information as to its source can be obtained.

Property descends in the family. All land, whether waste, forest or cultivated, nominally belongs to the chief, *i.e.*, near Pilam to the Amis chief, towards South Cape to the aboriginal chief or ruling family; but the occupiers, tenants in perpetuity, by annually paying their respective chiefs so much rice, barley, pigs, etc., for ground rent, become virtual possessors. Should the ground originally set apart for a family, their heirs and successors, by reason of unforeseen increase in number of the members, become insufficient

to support or provide for the household, the chief is so notified, and he apportions an additional piece of unreclaimed forest. If a family becomes extinct, the grounds revert to the chief, who may apportion them to others or to a branch of a family wishing to separate from the ancestral home.

There are rich and poor. Silver dollars and cotton fabrics, gunpowder, lead, arrow heads, firelocks, knives, etc., are obtained from the Chinese in exchange for deer horns, rice, grated potatoes, barley, jerked deer flesh, dried fish, pork, pigs, fowls, etc.

Silver is hoarded, and only on rare occasions circulated. Each family has an acknowledged head, to whom everything is supposed to belong. The members of the family are supplied by him with all articles of food and clothing, implements of husbandry, and weapons for the chase or war, which they may desire or that he thinks they reasonably require; but surplus of all kinds is retained by him in trust for the commune over which he presides.

The affairs of the Amis are managed by four chiefs, or rather, one chief as general president, with a council of three. At Pilam and villages in its vicinity these chiefs have immediate power over all members of the tribe; but in the more distant settlements, such as at South Cape, the chiefs of the nearest aboriginal tribe have jurisdiction over the Amis, and their decisions cannot be interfered with by their *confrères* at Pilam. If the Amis are not satisfied with the decisions of the aboriginal chiefs, or think themselves aggrieved, they can leave that district and go near enough to Pilam to be under the immediate rule of their own supreme chiefs. Chieftainship is hereditary, and both in this and headship of families the Salique law prevails, although at the same time women's private counsel and advice are well known to have sometimes great influence in the decisions of the chiefs. Their largest village contains about 2,000 souls, and there are also around Pilam about 20 smaller villages containing 200 to 300 inhabitants each; scattered along the coast towards South Cape are about 20 more villages of 200 to 300 inhabitants. A rough estimate gives the entire tribe as numbering about 12,000. A fruitful cause of disturbances between townships is arrack, of which all are very fond. Difficulties between villages are settled by the chiefs, who impose on those in the wrong fines of money, food or labour, and exact reparation for damage done. Usually after a free fight the belligerents exchange complimentary visits, smoke, and chew betel-nut. Murder in a European sense is unknown. If a man kills another through misadventure, he has to pay a fine, or else take the chance of being killed by an avenger of blood, as the relatives of the deceased may decide. To kill a man of another tribe is no offence, if the other tribe is in ignorance of the fact; but otherwise the offender has to be handed over for execution, or it may be a money payment is accepted in lieu by the tribe to which the deceased belonged, but they have free choice. If the chiefs of the Amis do not consider themselves justified in handing over an accused person or making him pay a fine, the two tribes without further parley go to war with each other, and after a few days' fighting the killed and wounded on each side are counted, and, governed by the custom in such cases, those having most casualties declare themselves defeated and straightway pay an indemnity in money, buffaloes or other articles to the conquerors. Two of the head chiefs act as generals, the other two direct affairs at home, and all the prophetesses do their utmost with Marahtoo to secure success for their tribe, the two chiefs at home supervising the incantations each day. Bush-fighting is their mode of war, and both sides try to avoid the open as far as possible. The chiefs work in their fields like the poorest of the tribe, but on festive occasions and when adjudicating quarrels precedence and marked respect are shown. A chief can cut down any of his tribe who may show signs of cowardice on the war-path, and does not hesitate to do so when necessary. They have no particular war cry, but encourage each other with shouts.

Their intercourse with Europeans has been very limited. They have heard of Dr. Maxwell. They all seem to know, and a great many have seen, Mr. Pickering, now Chinese Protector in the Straits colonies. A visit to South Cape Lighthouse and permission to go over the establishment give them great delight. One old man on seeing the light apparatus was so astonished that he dropped limp on the floor; and their shouts and gestures of astonishment are as remarkable as they are memorable. They are indefatigable in examining and gazing at the armament, but, strange to say, that which gives them the most

unmixed delight is a grindstone. When its use was explained, there arose a general rush to grind everything from fingers to knives, or even broken tiles, and they showed that they thoroughly understood the value and working of what they said was the most wonderful invention at the station. Europeans are believed by them to come out of the great sea, and always live in ships. Of any land beyond Formosa they have no tradition or knowledge except an indistinct legend of some place somewhere the inhabitants of which are all dumb, and so intercourse is carried on by signs, digital or graphic. This is the only trace which can be found of their having any original idea or reference to writing.

Two harvests go to one year, and no other method of reckoning periods of time is known.

They show affection by kissing and embracing, use of endearing terms, stroking the head and face, and, in fact, much as other human beings do.

Near the sea-coast their houses are constructed of wooden walls, or walls built with sun-dried bricks and lined on the outside with split bamboo; inland they dwell in pits dug in the side of a hill and covered with slabs of slate, of which in many localities the quantity is unlimited. Formerly they did not know how to make arrack, but have learnt the art from the Chinese, and now make it themselves.

Although cleanly in their persons, their houses are dirty and untidy. Their staple produce are rice, potatoes, barley, pigs and poultry, besides game of all kinds. They also breed buffaloes for agricultural purposes.

Beef, pork, rice and vegetables, also all kinds of fish, are freely eaten, but poultry never, being only reared for sale to the Chinese. Their reason for not eating fowls is that hens are so quiet and good that they assume they must be the abiding place of good spirits, hence it would be unlucky to eat them. Slavery is not known, but hired servants are often met with. Famines are unknown, but sometimes harvests are very poor.

Thunder and lightning are caused by two spirits, male and female, named Kakring and Kalapiet. A domestic row arises, the husband in his anger knocks about the household effects, thus causing thunder, and the wife in the height of her effort at retaliation uncovers herself, which gives origin to the lightning. It may be mentioned that uncovering the person is a favourite way of showing anger, scorn and contempt among the Amis females. Rain and wind, they say, are caused by spirits, but how they cannot imagine.

Earthquakes are frequent, but of late years have not been very severe. Tradition tells of an earthquake so violent as to overthrow men, houses and even trees. They say an earthquake is caused by a pig scratching itself against an iron bar stuck into the earth.*

Near Pilam a curious custom prevails of all the young unmarried men living and sleeping together in a large house outside the village, where story-telling, drinking bouts, etc., take place. The idea is not to debase or corrupt the minds of the young women or children, and to allow the latter in their tender years only to come in contact with the staid and elderly.

Small-pox in latter years has been very prevalent among the Amis, and when a village is infected all the people fly to the mountains. Many Chinese impostors go among them professing to vaccinate, and the Chinese Government have sent some people to perform inoculation. The savages say that small-pox was introduced by the Japanese on the occasion of their last landing, and that before that date it was not known in the south of Formosa. In some villages the Amis tattoo, but the habit is not general. They say the sun, moon and stars are made by two spirits named respectively Dgagha and Barrtsing. The sun revolves every day round the flat world, going under the earth at night.

They believe there are people under or within the earth having a rough skin, but they have no idea of a creation. When hungry and far from home they find relief by tightening their girdles and chewing betel-nut, of which they always carry a copious supply. They are very hospitable and kind to travellers. From Pilam to South Cape, keeping close to the east coast, any European could travel with complete safety, and be sure of being joyfully asked by these people to share their bed or board.

* "In Celebes we hear of the world-supporting hog, who rubs himself against a tree, and then there is an earthquake."—*Tylor. Primitive Culture. vol. i. p. 264. 2nd ed., from Journ. Ind. Archip. vol. ii. p. 327.*

The following numerals are compared with those of the neighbouring tribes and also with the Malay; also a few words are given which have a similar sound in the Malay and other languages. The spelling is strictly phonetic, the *i* being sounded as in French, *a* as in *man*, and *ai* as *y* in *my* :—

	Pilam Amis.	S. Cape Amis.	Paiwan Savages.	Amis anciently.	Malay.
1.	Chi-sai.	Ika.	Ita.	Anai.	Satu.
2.	Too-sah.	Oko.	Nusa.	Tong.	Dua.
3.	Tu-lu.	Tapar.	Tulu.	Soy.	Tiga.
4.	Li-pat.	Roah.	Li-pat.	Ta-ah.	Ampat.
5.	Lima.	Kaid.	Lima.	Si-a.	Lima.
6.	Unum.	Sulin.	Unum.	Sa.	Anum.
7.	Pi-tu.	Mia.	Pita.	Oko.	Tugu.
8.	Va-ro.	Ratu.	Valu.	Ata.	Lapan.
9.	She-va.	Koris.	Siva.	Aho.	Simbalan.
10.	Pu-kul.	Sapong.	Pulo.	Iu.	Spulo.
House.		Rooma.	Tapao.		Rooma.
Moon.		Voolan.	Voolai.		Boolan.
Rain.		Ujal.	Kumudjal.		Ujan.
Pig.		Vavi.	Vavi.		Babi.

Also the following words, some of which have a strange resemblance to English :—

Nose.	Noso.	Head.	Vumo.
Arm.	Karm.	Mouth.	Gnous.
Ear.	Tangera.	Hair.	Vokus.
Cat.	Pushi.	Foot.	Saripat.
Sun.	Chilia.	Tobacco.	Tambacco.
Stars.	Voess.	Dollar.	Peso.

These people never smoke opium. They drink cold water freely, and bathe in cold water summer and winter. During cold weather they kindle fires in their houses. Both men and women go about in their own villages in warm weather quite naked, but when outside or when travelling or hunting the men wear waist-cloths and the women jackets and petticoats.

Notes on the Paiwan Tribe, by Mr. Taylor.

The immediate neighbours of the Amis are the Paiwans, a very turbulent and warlike people, fond of the chase and amusements, disdaining agriculture, preferring to rent their grounds to Chinese settlers. They are very proud and independent, considering the Amis far beneath them. Extremely cleanly and neat in their persons, habits and houses; with a high moral code; truthful and honest to the last degree, and honourable in all their transactions; clear-headed, and apt to learn anything themselves, with a very high opinion of ability and intelligence in others; these are certainly a most remarkable people. The ruling family of this tribe has great influence among the other aborigines in South Formosa, and under their late chief Tokiton were respected and feared both by the Chinese and other neighbours. This family originally came from a place called by them Tipun, and are still recognised by the present chief of the Tipuns as his near relations, visits and presents being interchanged each year. The language of the Paiwans is different, however, from that of the Tipuns, and very closely resembles Malay. The features of the Paiwans also, and their general build and appearance, are very similar to the Malay. The Paiwans were once tutelary to the Tipuns, but when their present rulers came from Tipun—the account of which and the cause of the disruption is highly interesting but too lengthy for insertion here—the Paiwans became independent. All the members of the chief's family are distinguished from their subjects by reason of their slender build, short stature, large eyes, small ears, hands and feet, and aquiline noses; further by their punctiliousness in ceremony and politeness, while their subjects are, as a rule, tall, stout, strongly built and more *prononcés*, if not rather boisterous.

These Paiwans were at one time noted head-hunters, and no one attained manhood until he could boast of having decapitated an enemy. Of late, however, this practice has almost ceased. Cannibalism is unknown, and they never torture an enemy. The present chief, who has travelled through the greater part of Formosa, says that four days' journey from the South Cape there is a high mountain on which dwells a cannibal tribe, and further inland a race of red-haired savages, speaking a peculiar language, and using brass firelocks of their own manufacture. These red-haired men allow none to enter their territory, and keep aloof from all other tribes.

Each Paiwan village has a sub-chief of its own, and the supreme chief is only consulted on very important occasions. From accounts received of the Tipuns, they must bear a strong physical resemblance to the Japanese. The folklore of the Paiwans and Tipuns, the tales of their battles, and encounters with foreigners long ago, and their traditions, are interesting and amusing in the extreme; but space forbids their narration at present.

The Paiwans say that they sprang from a rock, which opened, and two beings, male and female, burst out. They have no idea of a Supreme Being, and do not trouble themselves about astronomy. They believe in a future state, but have no heaven or hell. All disembodied spirits go to one place, very beautiful, full of deer and all sorts of game. Where this place is they do not know exactly, but they believe it is towards the north-west.

They wear only a waist-cloth, and on their feet sandals made of boar skin. The women, who are, as a rule, very handsome, wear petticoats. Being strict monogamists and very virtuous, husband and wife usually live happily together. They do not attain so great an average age as the Amis, usually dying at 60 to 70. They also reckon their years by harvests. Women have great influence in their councils, and hold an honoured place in their households. Small-pox makes great ravages among them, and arrack, the art of making which has been taught them by the Chinese, is fast debasing these really good and noble "savages." They cultivate betel-nut and tobacco, being very fond of both.

They are very hospitable, and Europeans could venture among them without danger. The chief says that his word would protect a foreigner through all the southern half of Formosa.

METEOROLOGICAL.

Fortunately for us, most of the typhoons which approach Formosa break off or diverge at South Cape, the centre passing well to the eastward, leaving Takow and Taiwan-fu but little liable to more than a severe gale.

It is not the severity of the wind, however, or the sea that may exist during its continuance, which constitutes the chief inconvenience and danger of south-west monsoon weather to us, but rather the resulting breakers which rise on the bar not only at Anping and Takow but at all the small ports or inlets on the west coast of Formosa south of the Pescadores. Practically, any disturbance south of Formosa is sufficient to raise a sea which makes these obstructions impassable, and cuts off from shelter all boats or junks which may happen to be caught on what, with the wind in the then prevailing direction, is a dead lee coast.

It is found here that by attentive study of the proper instruments the advent of bad weather may generally be foretold with tolerable certainty in time to enable the fishermen and others to be out of harm's way when it does arrive. Of course, these people, by observance of natural appearances and signs, can themselves make out just before the event that it is going to happen; but the sea often comes up so quickly that persons outside may be cut off and much property and even life lost.

Witnessing some distressing instances of disaster consequent on the want of more accurate meteorological information in the early part of the south-west monsoon of 1883, we were led to attempt, by a simple system of signalling, to modify in some degree the prevailing ignorance.

The signals are displayed from the hospital flagstaff, and there can be no doubt that this is looked on by the people as an important addition to the benefits already derivable, through that institution, from foreigners and their ways.

In the north-east monsoon, as the barometer generally stands high, varying little or nothing during the whole season, it may be said to be practically unreliable as a weather glass; but fortunately, however hard it blows or high the sea may be from the northward, the wind being more or less off shore keeps most of the bars smooth and navigable. No signals, therefore, are, as a rule, shown during the months of January, February and March.

I may mention that this year the benefits derived have attracted official notice, the local magistrate issuing proclamations directing the attention of the people to the system, recapitulating the significance of each symbol shown, and otherwise commending study of the plan to all those whose occupations take them on the water. I was also informed that the "Board for Foreign Trade and Intercourse" at Taiwan-fu, with the Taotai's approval, desired to start a similar system at Anping, in telegraphic communication with that in use at the David Manson Memorial Hospital.

Apart, therefore, from the good really effected, it is satisfactory to get these not very usual admissions of benefits conferred, coupled with the desire to aid in carrying on and propagating the work such demonstrations exhibit.

The following are the symbols used:—

A triangle, ▲ ..... Glass falling; weather uncertain.

A square, ■ ..... Glass falling considerably. A storm or gale, with high sea, may be expected soon. Fishermen and others should not go far from port.

A rhomboid, ◆ ..... Glass falling rapidly. A typhoon approaching. Secure all junks and catamarans; make all preparations. Boats outside must come in at once.

Geneva flag above, triangle below,  ..... Glass rising; better weather may be expected.

The triangle is only hoisted after it appears certain that the mercurial depression is not a merely temporary fall.

The last signal is flown for a few hours, after which, if the glass continues to rise, it is hauled down.

All the above has been placarded over the town in conspicuous places since the early part of last year, and copies have been hung in shops and other places where the seafaring population are wont to congregate. The system is thus thoroughly brought under the notice of all, and seems now to be well understood.

ABSTRACT of TAKOW CUSTOMS METEOROLOGICAL REGISTER, from 1st April 1882 to 31st March 1884.

DATE.	BAROMETER.		THERMOMETERS.				SELF-REGISTERING THERMOMETERS.		RAIN IN 24 HOURS.	WIND: Force as per Naval Scale.		No. of Days in each Month on which no Rain or Snow fell.
			Wet Bulb.		Dry Bulb.		Max. in Air,	Min. in Air,				
	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.	9.30 A.M.	9.30 A.M.		9.30 A.M.	3.30 P.M.	
1882.	*Inch.*	*Inch.*	°	°	°	°	°	°	*Inch.*			
APRIL:—												
Max.	30.24	30.15	79	80	80	81	85	77	1.10			
Mean	30.05	29.94	75	76	77	77	80	70	.35			24
Min.	29.95	29.90	71	72	74	74	73	61	.03			
MAY:—												
Max.	30.09	30.04	82	83	83	85	89	77	1.60			
Mean	29.96	29.91	79	80	80	81	84	74	.56			12
Min.	29.82	29.79	75	76	76	77	74	67	.02			
JUNE:—												
Max.	30.06	30.02	83	84	85	86	89	80	2.15			
Mean	29.94	29.89	81	82	83	84	86	78	.66			19
Min.	29.83	29.80	79	80	81	82	83	75	.05			
JULY:—												
Max.	30.07	30.03	85	85	87	87	89	82	1.25			
Mean	29.90	29.86	83	84	85	85	87	79	.35	No force of wind taken.	No force of wind taken.	21
Min.	29.51	29.49	82	82	83	83	85	77	.03			
AUGUST:—												
Max.	30.08	30.03	82	82	83	84	86	80	9.00			
Mean	29.85	29.83	79	80	81	81	83	76	2.11			12
Min.	29.48	29.50	77	78	79	79	76	72	.02			
SEPTEMBER:—												
Max.	30.08	30.03	87	83	86	86	88	80	.65	7	8	
Mean	29.96	29.93	81	81	83	84	86	78	.17	2.1	3	15
Min.	29.58	29.48	79	79	81	82	84	76	.03	1	1	
OCTOBER:—												
Max.	30.19	30.11	82	82	84	84	86	76	1.25	4	7	
Mean	30.06	29.99	78	78	82	82	84	75	.78	2	3	28
Min.	29.81	29.72	75	76	80	81	82	74	.16	1	1	
NOVEMBER:—												
Max.	30.30	30.25	77	79	82	83	84	74	...	4	7	
Mean	30.18	30.13	72	73	76	77	82	69	...	2.8	4.4	30
Min.	30.04	30.05	61	62	65	67	70	56	...	2	...	
DECEMBER:—												
Max.	30.42	30.30	71	73	75	77	79	69	...	6	7	
Mean	30.19	30.14	65	68	69	71	73	62	...	3.2	4.5	30
Min.	30.00	30.00	53	57	56	61	62	50	...	2	2	
1883.												
JANUARY:—												
Max.	30.31	30.30	74	76	76	78	81	70	.80	5	6	
Mean	30.20	30.18	63	66	66	69	70	60	.80	2.7	4.2	30
Min.	30.08	30.00	54	58	58	60	60	50	.80	2	2	
FEBRUARY:—												
Max.	30.30	30.29	72	73	74	75	78	70	...	4	6	
Mean	30.19	30.16	64	66	67	69	71	60	...	2.5	3.9	28
Min.	30.10	30.08	56	58	58	60	61	51	...	2	3	
MARCH:—												
Max.	30.18	30.14	71	74	74	77	80	68	4.31	4	6	
Mean	30.10	30.07	66	67	68	70	73	63	.89	2.3	3.6	20
Min.	29.92	29.89	53	56	66	61	65	56	.10	1	1	

ABSTRACT of TAKOW CUSTOMS METEOROLOGICAL REGISTER—*continued.*

DATE.	BAROMETER.		THERMOMETERS.				SELF-REGISTERING THERMOMETERS.		RAIN IN 24 HOURS.	WIND: Force as per Naval Scale.		No. of Days in each Month on which no Rain or Snow fell.
			Wet Bulb.		Dry Bulb.		Max. in Air, 9.30 A.M.	Min. in Air, 9.30 A.M.				
	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.				9.30 A.M.	3.30 P.M.	
1883.	*Inch.*	*Inch.*	°	°	°	°	°	°	*Inch.*			
APRIL:—												
Max.	30.17	30.16	80	82	83	85	87	79	.60	5	11	
Mean	30.04	30.03	74.5	76.5	77	80	81	72.5	.30	2.2	3.1	27
Min.	29.82	29.52	68	70	70	74	75	67	.10	1	1	
MAY:—												
Max.	30.10	30.09	82	83	85	89	88	80	2.80	4	4	
Mean	30.01	29.99	79	79.5	82	84	84.5	77.5	1.98	1.3	2.1	28
Min.	29.82	29.86	74	75	75	78	78	75	1.50	1	1	
JUNE:—												
Max.	30.08	30.03	82	83	85	88	88	80	4.46	8	6	
Mean	29.94	29.92	79	80	81.5	83.5	84.3	77.3	1.28	2.1	3.5	18
Min.	29.80	29.82	75	76	77	78	79	74	.14	...	2	
JULY:—												
Max.	30.09	30.06	81	86	85	88	88	80	9.40	6	6	
Mean	29.91	29.87	80	81	83	85.5	85.5	79	1.16	2	3.3	15
Min.	29.71	29.70	77	77	78	78	79	75	.05	...	1	
AUGUST:—												
Max.	30.06	30.02	82	85	84	88	87	82	4.13	5	7	
Mean	29.84	29.82	80	81	82	84	85	79	1.12	2	2.9	15
Min.	29.74	29.72	77	78	77	78	80	76	.90	...	1	
SEPTEMBER:—												
Max.	30.15	30.09	82	83	85	87	87	79	1.46	4	4	
Mean	30.01	29.97	79.3	79.7	82	84.4	85.3	77.5	.34	1.3	2.7	18
Min.	29.82	29.84	77	78	79	80	82	74	.02	...	1	
OCTOBER:—												
Max.	30.24	30.24	80	80	83	85	86	77	...	3	4	
Mean	30.14	30.09	76	77	79.7	81.6	82	74	...	1.2	1.8	31
Min.	29.96	29.90	72	75	77	80	79	71	...	1	1	
NOVEMBER:—												
Max.	30.28	30.20	78	79	79	80	81	74	.08	5	7	
Mean	30.14	30.13	73	74.6	76	77.8	79	70	.08	2.2	3.3	29
Min.	30.09	30.06	67	70	72	73	75	66	.08	1	1	
DECEMBER:—												
Max.	30.40	30.38	71	72	74	77	78	68	...	8	9	
Mean	30.27	30.21	62.3	64.6	66.3	69.7	72.6	62.8	...	3.5	5	31
Min.	30.12	30.10	53	56	58	61	65	51	...	2	3	
1884.												
JANUARY:—												
Max.	30.40	30.38	67	70	71	75	76	67	...	9	8	
Mean	30.28	30.25	62.6	65.5	66.2	70	71.4	61	...	3	6.3	31
Min.	30.14	30.09	55	59	59	63	64	52	...	1	3	
FEBRUARY:—												
Max.	30.34	30.34	66	73	69	75	75	67	.90	9	9	
Mean	30.20	30.18	61	64	63.7	67.5	69	59	.45	4.2	6	26
Min.	30.10	29.97	51	54	54	58	65	51	.16	1	2	
MARCH:—												
Max.	30.27	30.24	73	76	77	79	80	73	.62	5	7	
Mean	30.13	30.08	67.4	70	70.8	47	75	61.6	.22	2.8	4	27
Min.	30.04	29.96	63	65	62	65	71	58	.05	1	2	

DR. B. S. RINGER'S REPORT ON THE HEALTH OF AMOY

For the Half-year ended 30th September 1884.

NOTWITHSTANDING the general opinion that the heat this summer was by no means excessive, still the sick list was somewhat formidable, and numerous cases of malarial fever occurred, including some very severe forms of a remittent type, of which mention will be made hereafter.

An outbreak of cholera also took place, and in the month of August, 15 cases were treated at the Seamen's Hospital on Kulangsu. Of these, 11 occurred among Europeans, principally from the shipping, one case only being that of a foreigner residing in the Chinese city.

Out of the 15 cases treated, a total of 9 deaths has to be recorded. Of the 11 Europeans, 6 recovered.

Two other deaths have to be noted, both of which occurred with great suddenness.

The history of the first case was not very clear, the patient dying on board a steamer shortly after arrival in port; but it was thought that he contracted fever in Formosa, from which he suffered for several days. At the postmortem examination the blood was found to be universally liquid, no clots being discoverable either in the large vessels or cavities of the heart. The spleen was large and soft, and the blood could be squeezed from it as from a sponge. Numerous old pleural adhesions were observed, but no organic disease was found.

This case was probably one of pernicious remittent fever, as was the second, which commenced on the 12th September and proved fatal in seven days.

The patient was nursing at the time, and feeling uncomfortable, feverish and tired with aching pains all over the body, thought she had caught cold, but as the symptoms did not pass off she sought advice. On the 4th day the pulse was found to be 100 and temperature 102°; the bowels had been very freely open five or six times the previous day, but were then quiet; the tongue was dry and red at the tip, and in other parts furred; the skin imparted a harsh sensation to the touch; the secretion of milk was decreasing. The child was ordered to be weaned. The patient was placed on milk diet, and quinine in 3-grain doses was administered every four hours. The same condition continued till the 6th day, when the temperature rose to 103°, the pulse remaining at 100. The quinine had produced singing in the ears. The treatment was continued.

7th day.—Temperature, 104°; pulse, 100. Patient complained of great deafness, therefore the dose of quinine was not increased. There was some dyspnœa, and a little pain at the epigastrium, which was much relieved by sinapisms. 10 grains of DOVER'S powder, given at bed-time, secured a comfortable night.

Next morning, about 8.30, I found the patient insensible, with stertorous respiration. She was said to have had a violent shaking fit just previously. Temperature in axilla, 109°.5.

The patient died quietly shortly before 11 A.M.

There still exists in the minds of many people a great prejudice against the cold-water treatment in fevers, consequently not infrequently amongst private patients the hands of the practitioner are to a certain extent tied; but from what I have observed in less serious cases, I feel convinced that it is applicable to such cases as the above, and would no doubt greatly tend to reduce the temperature.

In cases where insensibility has already supervened, probably cloths wrung out of iced water and placed on the surface of the body would be more manageable than the cold bath. Excellent practical rules for the external application of cold are to be found in RINGER'S *Handbook of Therapeutics*, 9th edition, p. 61.

The following case of acute inflammation of the liver following dysentery is of considerable interest, showing how nearly suppuration may occur, and yet the organ apparently recover its normal condition under treatment:—

On the 24th June a patient was seen who had suffered for six days from dysentery. He had been carrying on his occupation as a diver for some days, but finding his complaint became worse he took an apartment on shore. When first seen the bowels were acting three or four times every hour, small quantities of blood and mucus being expelled, accompanied by tormina and tenesmus. The tongue was pale and somewhat furred, the pulse of fair volume, and the temperature but slightly over normal.

The patient was put upon milk diet and confined to bed, and a scruple of ipecacuanha administered. In about 10 days all dysenteric symptoms ceased. The liver, however, now became sensitive to pressure, especially in the epigastric region, and enlarged until it extended in the nipple line from 1 inch below the right nipple to a point 2 inches below the costal border. The left lobe and adjacent portion of the right lobe were exquisitely tender to pressure, percussion producing a stabbing sensation, which extended to the shoulder. The temperature ranged between 100° and 102°, and the pulse was somewhat accelerated. The patient was still kept on low diet, and the bowels regulated by means of warm water enemata when necessary. The pain was subdued by hypodermic injections of morphia varying from $\frac{1}{6}$ grain to $\frac{1}{2}$ grain, one injection in the 24 hours usually proving sufficient. A mixture containing 20 grains of chloride of ammonium in 1 ounce of water was exhibited three times daily, and sinapisms applied to the hepatic region from time to time. As some amelioration of symptoms took place under this treatment, it was strictly persevered in for five weeks, by which time all abnormal conditions had entirely disappeared, the liver returned to its healthy dimensions, and not the slightest tenderness existed in any part of it on pressure or percussion. The appetite was good and the bowels regular. The patient now returned to his ship and resumed his occupation.*

The following notes of the treatment of a case of impermeable stricture of the urethra will, I think, be found interesting:—

On the 31st July an able seaman, aged 31, from a British man-of-war, was brought to the Seamen's Hospital suffering from stricture of the urethra. He had reported himself with retention of urine, and after many unavailing attempts to introduce a catheter, the surgeons on board decided to puncture the bladder through the rectum, which was accordingly done. The canula was tied into the bladder, and the water being drawn off from time to time, the urethra was allowed to remain perfectly quiet for four days,

* [We are not always ready (perhaps fortunately for our patients) to recognise the wonderful complaisance with which nature verifies the diagnosis of suppurative hepatitis. We need only explore profoundly enough and frequently enough, and we are certain to find the pus of which we are in confident search. Here was a case wherein the patient certainly got well under rational treatment, but got well with much less fuss than would have enveloped him had he been sedulously prodded with an aspirator needle until pus was found, or, perhaps one might say, had formed. It is true he might have died; but people will occasionally die of abscess of the liver, however produced.]

after which rest it was reasonably hoped that a small instrument might be introduced. This hope was not, however, realised, for after prolonged and repeated trials, no bougie could be passed. The patient was now brought to the hospital, and on the 1st August further ineffectual efforts were made by my colleague, Dr. McDougall, and myself. The guard of the canula had caused ulceration of the skin of the perinæum, a bed-sore had formed over the sacrum, the urine was ammoniacal, and nothing could be passed through the stricture.

Next morning, the patient being under chloroform, the canula was removed and a medium-sized sound was passed down to the seat of stricture and the point turned outwards towards the perinæum. An incision about 1½ inch in length was now made in the central line of the perinæum, and the point of the sound cut down upon; when this was reached, the urethra was carefully laid open for some distance above the stricture, and the sides kept apart by means of silk thread passed through their edges. The strictured portion was exposed, and at length a small silver probe was passed through a narrow opening. This was effected more by feeling than by sight, as there was a considerable amount of hæmorrhage, which added much to the difficulty of the operation. The tissues were now completely divided down to the probe, after which a No. 8 gum-elastic catheter was passed without further difficulty into the bladder. Hæmorrhage from the depths of the wound proving rather troublesome, the incision was plugged firmly with lint soaked in solution of perchloride of iron, by which it was completely arrested. The catheter was tied in, and the patient returned to bed.

The temperature rose to 100°.6 that night.

Next morning the plug was removed without any bleeding, an enema was administered, and the wound was dressed with carbolic oil. On the 4th the catheter was removed and a new one introduced. There was some pain in the region of the stricture, and some urine escaped through the rectum. On the 7th the temperature rose to 103°.2; there was great pain and some swelling in the testicles, therefore the catheter was removed.

8th.—Some extravasation into the prepuce and scrotum, and a sloughing spot as large as a shilling at the root of the penis existing, two free, longitudinal incisions in the line of the raphé were made. There was still some escape of urine through the rectum; therefore, at the suggestion of Dr. Burnett, an elastic catheter, with a long india-rubber tube attached, was tied into the bladder, and the urine constantly allowed to drain off into a vessel. By this means the wound in the rectum soon healed, no escape of urine occurring from this date. In the course of three days the slough separated, after discharge of much offensive pus. The temperature had fallen below 100°, the swelling and pain had much decreased, and the catheter being removed the patient passed water in a good stream without pain.

A bad attack of diarrhœa followed during the next eight days, and the patient fell into a weak condition. From this, however, he rallied, and a No. 8 gum-elastic catheter was passed every few days with perfect ease.

On the 8th September the perinæal wound was healed, and on the 17th September the patient was discharged cured, without having had any further bad symptoms.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF PAKHOI

For the Year ended 30th September 1884.

DURING the period under review the health of the small foreign community residing here has on the whole been satisfactory.

It surely speaks well for the place that during a residence of nearly three years I have been only once called to attend a resident suffering from bowel complaint, and then the disease was not acquired locally. Further, no case of fever attributable to climatic causes has come under my notice.

The cold season set in a little earlier than usual, and we were able to get into cloth by the middle of October. Till the end of January the weather was crisp and pleasant; during the greater part of February it was raw and cold. From early in March till the month of May we had damp, moist, unpleasant weather. Summer then set in, and, as usual, has been a very temperate season. The rainfall has been remarkably small, as a glance at the meteorological table will show. The rain in inches is unfortunately not given, but in future tables it will appear.

The following cases are taken from my note-book:—

X., æt. 32; seen 22nd March; suffering from swelled face and symptoms of feverish cold; had got severe wetting previous night. Right cheek much swollen. Mouth with difficulty examined; gum of right upper jaw intensely inflamed and tender; inflammation more marked round two stumps. Temperature, 103°.2; pulse, 70. Tongue coated; breath very fetid. Diaphoretic draught ordered. Evening.—Temperature, 100°. Saline draught to be taken early morning.

23rd.—Slept badly. Swelling of cheek great; gum intensely inflamed; on the palate opposite the last molar there was a tender swelling. After a week's treatment, chiefly by purgations and free incisions, patient was much improved.

6th April.—A little pus was oozing from round the stumps, and their removal insisted on and an iodine mouth wash ordered. Patient feeling well was not seen till the end of the month, when he complained of pain in the jaw, and face a little swelled. On examination I found there was a little pus oozing from where the stumps had been, and with a probe dead bone was made out, and its immediate removal advised. Two days later I removed a large mass of dead bone, and all further trouble ceased.

The subject of these notes was an apparently healthy man, free from any specific taint, and with only a doubtful scrofulous history; he lived well, and never previously required any medical care. Consequently it is a little difficult to see why such a severe inflammation, leading to the death of bone, should have arisen from a trivial cause. Mr. SEWILL * has recently drawn attention to the occurrence of *spasm of the muscles of the face, and cataract, due to dental*

* *Lancet*, 1884, i, 709.

irritation. Now, it happened that early in the year my patient had casually mentioned that his right eyelid was constantly twitching, to which I confess I did not pay much attention. Such indications of reflex irritation should not be neglected. In a case I recently heard of the patient, suffering from necrosis of the upper jaw, was compelled when a twinge of pain came on to go immediately and void urine, and the same thing occurred when any attempt was made to remove portions of the dead bone.

It is now well known that during the tertiary period of syphilis gummata may be deposited in the penis, and the possibility is recognised of mistaking a broken-down gumma for a primary sore.*

The following is an example of temporary difficulty in recognising such a case:—

P. came under my care in the autumn of 1883, suffering from minute ulcers of the scrotum. Specific history vague, consequently no treatment adopted beyond "red lotion" locally. The ulcers had almost healed when patient left the port. In three weeks he returned with the ulcers completely healed, but after 44 days the scrotum again became covered with little ulcers, and there was a good deal of thickening round them. Recovery was speedy under mixed treatment, which was continued for some weeks. A month later, a hard mass about the size of a small bean was felt beneath the surface of the glans. There was slight redness, but no breach of surface; glands of both groins slightly enlarged. After a few days an ulcer had formed, but the hardness had not increased; glands unchanged, but patient complained of shooting pains in them. The ulcer closely resembled a true chancre, and there was a history of suspicious intercourse at a time which corresponded with a suitable incubation period. It was, however, hardly likely, with the above history, that it could be a case of reinfection. Specific treatment was again commenced, and the ulcer and hardness rapidly disappeared. Vague as the history was, it was clear patient had nine years before suffered from one sore or more, and had been under specific treatment, which he said only aggravated his condition; since that he never had any further trouble till the present time.

The author of *Chinese Notes* in the *China Mail* of 17th April 1884 speaks of a disease known to the Cantonese as *kapshik* (夾色), and reference is made to the great value of the anti-febrile medicines 午時茶, 甘露茶, and 傷寒茶. The writer seems to believe that many foreigners die from this disease, and were they only to take the above-named medicines their lives might be spared, and he also thinks that all so-called typhoid fevers should be treated with these remedies.

It has fallen to my lot this summer to treat two cases of the disease called *kapshik* by the Chinese. The men were boatmen on our staff, and I had every opportunity of noting the symptoms.

Case 1 was a severe one. The man stated that the disease was brought on by his getting a chill after intercourse on the previous hot night. The temperature ranged between 104° and 105°, other symptoms being great pain in the joints and bones, headache, sordes on lips, tongue covered with dry brown fur, skin pungent, bowels obstinately confined, urine high coloured, great cardiac oppression. The patient was treated with laxatives, diaphoretics and quinine, and in a week was convalescent, but terribly shaken, and it was some time before he gained strength. In the other case the symptoms were similar but less severe. This man also got a chill after intercourse. The fever appeared to be a continued one, running a short course, and amenable to rational treatment.

* Hill and Cooper, *Syphilis and Local Contagious Disorders*, 2nd ed., p. 289.

The Chinese use, as is well known, many strange and disgusting remedies. A member of our Chinese staff lately drank a rice-bowlful of child's urine, to cure some spitting of blood, and suffered severely from colic in consequence.

I have again to record an outbreak of *luen-tzŭ* (鼠子), or bubonic plague, which made its appearance with the rising temperature of spring. The first case that came under my own personal observation was early in March, and I believe it was one of the first. The epidemic had entirely exhausted itself by the second week in June. As to the mortality, I do not believe there were more than 500 deaths. My statement is based on the weekly inquiries I had made at the coffin-shops. My total comes to 371, and I have been advised to allow another 100 for children buried without coffins. The Chinese put the mortality down at a much higher figure.

I record the notes of two cases, but it will be observed that they differ little from the cases recorded by me after the outbreak of 1882:—

A male child, æt. 7, was seen on 9th March. He had been ill since the evening of the 7th; he was thin and poorly developed; heavy expression, with sunken eyes; skin sallow and very hot; hurried respiration; had been vomiting; tongue furred; no headache or diarrhœa. Temperature in axilla, 103°.2; pulse, 100. Above the right clavicle in the cervical region there was a small irregular, painful swelling; the skin was red and the swelling hard; no fluctuation. No other swellings or buboes could be found over the body, and no skin eruption was visible. Five minims of turpentine three times daily was ordered, and an ointment of red oxide of mercury was smeared over the swelling. The little patient died on the morning of the 12th. In the next house three other cases occurred, and rapidly proved fatal.

Turpentine has, I believe, been tried for plague, without much success. The paper on the "Therapeutic Actions and Uses of Turpentine," reprinted in the works of the late J. WARBURTON BEGBIE,* suggested its use to me; but so far I have not found it of any benefit.

On the 13th May my attention was called to a sick person lying under a mat-shed on the road, and those standing about asked if I could do anything. I found a woman, æt. 21, very sick. She had been seven days ill, and they had brought her away from her house that she might die in the open; this is not an uncommon practice in Pakhoi. The woman had a pale, worn look; tongue red, dry and glazed, with difficulty protruded; sordes on lips and teeth. Temperature in left axilla, 99°.9; pulse very weak, impossible to count. There was a large swelling of the glands on the right side of the neck and at the angle of the jaw; the glands of the right axilla were also enlarged. Next morning the woman was reported to be much better, and asked for more medicine. (I was giving 1-drachm doses of aromatic spirit of ammonia.) At 1 P.M. she was sitting up pretty well, but was quickly tired. Pulse very weak; temperature sub-normal. Tongue red, dry and painful; glands of neck in same condition; no suppuration; glands of left groin now enlarged and painful. On the forehead there was an acneiform eruption, and on the back I found a crop of small boils varying in size from sixpence to a pea; some were discharging a little pus, while others were red. The patient died at daybreak on the following day, and decomposition rapidly setting in. This is the first case where I have found boils.

Why this town should have been visited this year by plague, while last year it escaped, I am at present not prepared to say. It is a subject of deep interest, and one that requires careful observation. That the variations of the season in early spring play a prominent part I have not the slightest doubt.

* *New Sydenham Society*, 1882.

For comparison, I invite attention to the subjoined table, which shows that in the early part of the year 1883, when there was no outbreak, the temperature was a little lower, and more rain fell than in the corresponding periods of *1882* and *1884*:—

Month.	1882.		1883.		1884.		Remarks.
	Average Day Temperature.	No. of Days on which Rain fell.	Average Day Temperature.	No. of Days on which Rain fell.	Average Day Temperature.	No. of Days on which Rain fell.	
	° F.		° F.		° F.		
January	67	5	64	2	68	4	
February	71	2	58	3	61	8	
March	76	5	63	16	70	7	Epidemic breaks out in 1882 and 1884.
April	76	4	78	8	74	11	
May	87	4	84	6	81	8	
June	88	4	86	11	85	17	Epidemic ends in 1884.

In my remarks on the outbreak of 1882 I spoke of the dry winter, and I wish to point out that the winters preceding the years that the disease has come under my observation have been long and dry. I am, however, informed that the disease has raged when the springs were wet, but invariably exhausted itself by the end of June.

At present it appears to me that as the rainfall is so small the surplus refuse and filth never gets a chance of being removed; the streets, however, are constantly kept moist, owing to the amount of water that is carried through them. The most casual observer cannot but be struck by the bluish-black, oily fluid which is always oozing from the houses into the streets, and again in the houses you see it on the floors and round the bottom part of the walls. Lastly, with the rising temperature the disease breaks out.

The following is the outcome of my latest observations:—

1. *Lung Complications.*—In no case have I found any, nor have I heard of any.

2. *Incidence.*—The better class of natives, though living in the worst parts, do not seem to be so readily attacked; the greater part of the mortality is among the coolie class.

3. *Animals*, as remarked in 1882, appear to escape, with the exception of rats.

4. *Incubation.*—Nothing very positive has come to light about the period, though I am still of opinion that it is short. The following case gives a little information, and I briefly record it:—

A Customs boatman, on 2nd April, was granted 14 days' leave to bury his father, who had died of plague. On the 16th the man reported sick and unable to return to duty, and on the 20th he himself died from the disease. In this case I have little doubt the man acquired the disease from coming into contact with the dead body of his father, as previous to 2nd April he had small chance of being infected, none of the boatmen being permitted to sleep in the town, and their duties through the day preventing them going there.

5. *Origin of the Disease locally.*—I am of opinion that it developed itself, its origin dating from the time when the town increased in size, and as a consequence increased in filth and misery. It must not, however, be forgotten that prior to 1870 trade was carried on with the province of Yünnan; but from the nature of the goods brought from that distant province they are not likely to carry disease. Hirsch,* in

* *Handbook of Geographical and Historical Pathology*, vol. i. Creighton, *New Sydenham Society*, 1883.

his excellent chapter on plague, states that there can be no doubt that the morbid poison can be diffused through goods. I have it on the most reliable authority that the disease occurred here in the spring from 1871–77, and it will be remembered that Mr. ROCHER mentions that the epidemic was very bad in Yünnan during the years 1871–73.

6. *Superstition and Fear.*—There was great dread of the disease among the natives of every class. Many quitted the town as before. Certain kinds of food were avoided, and most people were careful not to go down street after the evening meal.

7. *Appearance of the Disease in other Districts.*—At the prefectural city of Lienchou it broke out early in March, and became extinct in July. It was also reported to have broken out in the province of Kwangsi, but there it did not appear to take an epidemic form.

8. *Chinese Treatment.*—At one period of the outbreak many of the Chinese above the class of coolies were busy hunting up works of science to find a cure, and in consequence many drugs were tried. The following are some of the medicines used:—*Hwang-lien* (黃連), described by PORTER SMITH as anti-febrile. *Ts'ai-hu* (柴胡), *Bupleurum octoradiatum:* antiphlogistic, derivative, arthritic and deobstruent; used in various forms of inflammation and in puerperal fever. *Heh-san* (黑參), black ginseng: action eliminative. *Ma-peh* (馬勃), *Lycoperdon giganticum.* *Pah-ho* (薄荷), mint. *Ch'in-p'i* (陳皮), orange peel: a great panacea of the Chinese doctor; action stomachic, stimulant, antispasmodic, antiphlogistic, antiphlegmatic, also possessing tussic qualities. *Kih-kang* (桔梗): deobstruent. *Hwang-kin* (黃芩), *Scutellaria:* anti-febrile, demulcent, etc. *Shing-ma* (升麻), *Thalictrum rubellum:* tonic and derivative. From the above it will be observed that the Chinese line of treatment was to obtain something to control the fever, and a little tonic and stimulant was also sought after.

METEOROLOGICAL READINGS for the Year ended 30th September 1884.

MONTH.	THERMOMETER.						Days on which Rain fell.
	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Average Day.	Average Night.	
1883.	°F.	°F.	°F.	°F.	°F.	°F.	
October	85	62	82	63	80	71	6
November	81	55	80	54	70	63	9
December	71	51	70	50	63	55	3
1884.							
January	76	50	74	50	68	63	4
February	72	43	70	41	61	52	8
March	80	54	77	54	70	62	7
April	84	53	79	52	74	66	11
May	87	65	83	63	81	73	8
June	89	75	85	72	84	74	17
July	91	76	87	76	85	76	11
August	88	74	87	73	85	77	11
September	90	73	88	72	82	78	4

FURTHER NOTE ON DISTOMA HEPATICUM.

By WALLACE TAYLOR, M.D.

IN the last number of these Reports an article on Distomata Hominis appeared from my pen.* Since writing that article I have visited one of the districts infested by Distoma Hepaticum, near Okayama, and I am now able to give a more minute account of the locality. Both the place and the people present so many peculiarities that they seem to hint at the mode of infection. Hence I consider a description of them sufficiently important to justify a second reference to the subject, especially since some cases of infection of the human body by this parasite are said to have occurred in China.

The infected district near Okayama is indicated by the red line on the accompanying map. It is a low section of land lying between a lagoon of brackish water and the sea, and surrounded on either side by low hills. The length from the lagoon to the sea is from 15 to 20 miles, and the width between the hills from 3 to 5 miles. The inhabitants of this whole region are now known to be more or less affected, but the number infected is greater in some parts than in others. This region has been reclaimed from the sea at various times from 60 to 100 years ago; it is protected from the sea by dykes. The soil is a sandy loam, with somewhat gravelly subsoil, derived apparently from the washings of the low hills on either side; it is comparatively dry, and its appearance gives no idea of its having been reclaimed from the sea. It is traversed by canals and ditches leading either to the sea or to the lagoon. The water of the ditches is brackish, and there are no wells. Water for culinary purposes and for drinking is brought from wells at the foot of the hills on either side. The inhabitants do not live in villages, as in other parts of Japan, but in houses scattered over the country, as each inhabitant brought his lot of land under cultivation. Hence their immediate surroundings are more healthful than that of farming villages generally, and the people appear in better circumstances than those of most farming districts.

From the people and the doctors who practise among them I learn that they live upon the same food as their neighbours who dwell among the hills near by or upon the low lands north of the lagoon, where infection is unknown. The mollusks they eat (clams, shell-fish, oysters, etc.) are all taken from the same locality. They deny that water-snails are eaten. They state, however, that when they are out of water, especially if weary or thirsty and it is any distance to the wells of fresh water, they occasionally use the water from the ditches. This fact also is significant that very many more of those who live in the central part of this district furthest from fresh water are affected than of those who live near the hills. As you approach the hills the number of cases of infection diminishes remarkably and as soon as you reach the district where wells of fresh water are near at hand, infection is unknown. More women are affected than men, and about two children to one adult. T

* Customs *Medical Reports*, xxvii, 44.

reason assigned for this, and it appears reasonable, is that the children playing about the ditches more frequently drink the ditch water. The foregoing circumstances constitute strong presumptive evidence that the ditch water is the source of infection, at least in this section, if not in all.

The ova of the distoma are found in the fæces. The contents of the latrines are used as fertilisers. Many species of snails abound in this locality. Snails are the intermediate host of this entozoon. The cercaria of the distoma are conveyed by the snail to the ditches, infect the water, and thus find entrance and lodgment in those who unwittingly use the water from the paddy-fields. But what species of snail is the intermediate host in this locality is left for future investigation to determine.

A large tract of land lying north of the lagoon has been reclaimed from the sea, and is a flat, low, damp section of country, yet the inhabitants do not suffer from the distoma. The people live in villages, and use water from wells near at hand. It is quite probable also that the distomata infesting man are not found in this region. The character of the soil in the infected district is different from that of the surrounding low lands. This character most probably limits the distribution of the intermediate host, and thus circumscribes the infested district.

In regard to the distribution of this disease in Japan, it is now known not to be confined to the narrow limits stated in the previous article. The statement first made that there is a small district near Hiroshima where the people suffered from this parasite was premature. Further investigations have shown these cases to be of a different character. No deaths have occurred there from this cause, and ova have not been found in the fæces examined. But other localities have been discovered where the residents become infected. Besides the district described near Okayama, Bizen ken, there is a small district near Sendai, Miyege ken, where the distoma is found; also a district in the province of Shinano, and one or two districts in the provinces of Higo and Hizen, in the island of Kiyushu. Whether these districts are similarly situated to that near Okayama, or whether the habits of the people in regard to the use of water are the same, I am unable to say. Besides, some scattered cases are occasionally met with. In addition to the cases mentioned in the previous article at Kiyoto and at Otsu, a few have been seen in the low lands north of the lagoon, and two postmortems have lately been made on persons dying of other diseases, in which distomata were found infesting the liver—one from a village north of Okayama, and one at Wakayama, across the bay south of Hiogo. It is probable, therefore, that other districts more or less affected may eventually be found; while cases occurring here and there throughout the country show that this peculiar and interesting disease is not confined to such narrow limits as was at first supposed.

While passing through the infected district near Okayama, accompanied by the doctors who practice in that region, I stopped at a tea-house for about an hour, and 11 cases were brought in for me to see. In that vicinity 1 out of every 5 of the population was said to be a victim. Two of the patients brought had been given up to die within the last year, but were at that time comparatively well. Their livers were considerably enlarged, especially the left lobe; ova were found in their fæces, and the doctors said they were liable to die at

any time. One of the patients seen had been affected for 12 years. Of those whom I saw, with but one exception there had been two or three deaths in the same family from this cause. Children succumb sooner than adults. I found among the people a strong dread lest they should become the victims of this parasite.

Some 20 cases of Fasciola Hepatica infesting the human body are authentically recorded, while 10 or 15 cases of infection by other species of distoma would cover about all the well-known cases previous to the discovery of this disease in Japan. Within the last two years, at the Okayama Hospital alone over 200 cases have been seen. What numbers have been seen in other districts I have not yet learned.

Upon further investigation, Professor BAELZ considers that the parasite described and figured by him as Distoma Hepaticum Perniciosum does not differ from the Distoma Hepaticum Innocuum. The changed forms of the specimens he first drew his figure from were due to the action of the preservative fluid in which they were placed. He is now of opinion that thus far there has been but one species found in Japan, namely Distoma Hepaticum.

Distoma Hepaticum appears to be confined to those who live on low lands, while those who are the victims of Distoma Pulmonale inhabit mountain regions or dwell near hills.

II.—SPECIAL SERIES.

No. 1.—Native Opium	Published		1864.
„ **2.**—Medical Reports: 27th Issue (First Issue, 1871)	„		1884.
„ **3.**—Silk	„		1881.
„ **4.**—Opium	„		1881.
„ **5.**—Notices to Mariners: Second Issue (First Issue, 1883)	„		1884.